

# RAILROAD GAZETTE

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## EDITORIAL ANNOUNCEMENTS.

**THE BRITISH AND EASTERN CONTINENTS**  
edition of the Railroad Gazette is published each Friday at Queen Anne's Chambers, Westminster, London. It consists of most of the reading pages of the Railroad Gazette, together with additional British and foreign matter, and is issued under the name Railway Gazette.

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FRIDAY, MARCH 8, 1907.

The two most important railroad measures passed by Congress just before adjournment—the hours-of-labor bill and the appropriation for investigating automatic train stops—go into effect only after the lapse of one year in the first-mentioned case and four months in the other; the labor law March 4, 1908, and the other at the beginning of the next fiscal year. Both are radical innovations. To regulate the hours of labor on trains effectively throughout 200,000 miles of railroad lines, through a bureau managed in Washington would be almost out of the question; and, as was pointed out in our editorial of January 4, the worst cases of over-work are not touched by the law, nor, indeed, can be. Statutory regulation must be crude at best. Still, the law may be useful as an instrument for indirect coercion, and it must be confessed that there is need of something of the kind. The wise railroad manager will set his house in order long before next March. The cases of overwork which have been published are not so exceptional as they may seem. For many of the large roads the cost will be severe; but it is a desperate disease that has to be dealt with. For trainmen's rest-periods to alternate between 36 hours or longer at one end of a 150-mile trip and only four hours at the other end, may please the men, and economize engines, but the practice is at variance with all of our fine professions about alertness, level-headedness and reliability in the men who manage trains. This law is an innovation because of the unparalleled extent of its operation, for an act which goes into so much detail. The granting of power to investigate automatic stops is novel, at least in the field of interstate commerce, in that it goes to the extreme in trying to forestall private enterprise. To inspect every pail of lard sold in the United States is a rather novel function for the government to undertake, but it is in line with a need which has long existed and is generally recognized. The automatic stop, however, is a refinement in which only a small part of the people have any present interest, while at the same time it is a device which has been fairly developed by private enterprise. Publicity is beneficial in all matters pertaining to safety on railroads, and it will be a good thing for the Government to set forth the present state

of this art, even, perhaps, to the extent of encouraging meritorious ideas which have not yet been made practical; but the supposed devices with merit which have remained unknown because of the unfriendly attitude of the railroads or of the signal manufacturers will not materialize.

In its details the hours-of-labor bill is somewhat confused; but it seems to mean that except in emergencies trainmen (1) must not work more than 16 hours continuously; (2) after working 16 hours continuously must lie off 10 hours; (3) after working 16 hours within 24 hours, even if not continuously, must lie off 8 hours; that despachers and operators in important offices must not work over 9 hours, and other operators not over 13. The definition of "emergency" is somewhat limited in the last part of Section 3. The employee who works till he falls asleep is not punished at all. One of the humors at the last Committee hearing at the capitol was a complaint from the trainmen's representative that Secretary Moseley, who, probably, was the father of the original bill, was trying to emasculate it; and the words of the President of the United States were once more brought in question. Whatever Mr. Moseley was trying to do, the net result of his suggestions appears to have been the rejection of some of the most mischievous clauses of the bill, as, for example, the provision allowing three years in which to bring suit for violation of the law. Unfortunately, he failed in his effort to kill the provision making a difference between 12-hour and 24-hour telegraph offices, which will tend to retard the introduction and extension of the block system and encourage the employment of boys. As observed in the preceding paragraph, the law, as affecting trainmen, will be useful mainly as a club, for it can touch only a small part of the bad practice now existing. Taking the "24-hour period" as from 12 to 12, a trainman can work from 8.30 Monday morning to 12 o'clock Monday night, 15½ hours; rest three hours, and then work from 3 a.m. to 6.30 p.m. Tuesday; lie off 5½ hours and then after lying off—not necessarily resting—for 2½ hours more, or eight hours in all, can begin another similar process,

with no law to hinder. The railroad superintendent is the man to whom we must look for the safe management of trains.

In his testimony before the New York State Railroad Commission, Mr. A. H. Smith gives, as his opinion, the following explanation of the derailment of the electric train on the New York Central tracks near Williamsbridge on February 16 last: One of the trailing wheels of the leading locomotive was the first to leave the track. Something struck it and wedged between the flange of that wheel and the rail. All the bolts on the outside of the left-hand trailing wheel, the westerly wheel, were sheared off by the westerly rail so that that wheel must have been locked in tightly and the easterly wheel must have been wedged on the other side against the easterly rail. Mr. Smith testified that they had not had a derailment due to the rails spreading, in the ordinary sense of the word, which he could recall. His examination, on the evidence which led him to the conclusion which is summarized above, lasted two hours, and the exhibits and proofs submitted seem to support his opinion at every point. The shearing of the spikes was fully accounted for by the spreading force of the trailing truck when it was pinched in between the rails. The cause of the overturning of the four rear coaches was shown plainly to be due to the tearing loose from the car body of the trucks, and their bunching, followed by the sliding of the car bodies up on these trucks and tipping over on their sides. The coroner's investigation was quite as farcical as has been predicted. The railroad company was not allowed to submit rebutting evidence. The jury retired for consultation on Monday of this week. It is said that seven jurymen were in favor of a verdict to the effect that the track was safe and that the speed was not excessive, while five of the jurymen were insistent on severe condemnation. The result was a compromise verdict to the effect that the train "was running at a speed in excess of what has been proved to be safe," and that the company "did not take all the necessary safe and proper precautions to guard its passengers at this point, and consequently was culpably negligent." The coroner announced that the board of directors and the operating officers would be held for examination by the Grand Jury, but since this announcement he has caused no arrest or taken further action that has been reported.

The New York State Railroad Commission has issued two recommendations (printed in another column) which, if merit could atone for mistakes, would go far to offset some of the unwise things that the board has done. It has notified the railroads that their diverse and behind-the-times drawbridge practice should be brought up to date and has recommended that the block system be used everywhere. It does not appear that the drawbridge practice in the state is markedly dangerous, but it may fairly be called behind the times, because the remedy is so simple. Most railroad dangers are relative. With good discipline and low speed a drawbridge may be managed safely without any signals or interlocking at all; but when signals and interlocking make such a comparatively small addition to the expense of maintaining a bridge it is illogical not to have them. After the Atlantic City drawbridge disaster of last October, we sent inquiries concerning drawbridge floors and drawbridge locking practice to 40 of the principal railroads of the country; and the silence of a large part of these roads seems very eloquent; it seems to indicate in a striking way that, concerning their drawbridge practice, they have nothing to say for publication. In the matter of derailing switches at draws the New York Commission leaves the railroads with a dilemma on their hands. Where there is a long trestle approach to a draw the question of the location of the derail may be hard to settle. A sand track might keep a derailed train from tumbling into the water, but most railroad men have had so little experience with sand tracks that they would hesitate to use one in such a place. Setting the derail at a point back on the shore might seriously delay traffic; so that in any event it might be found that a regular reduction of speed would be the only rational course at such a bridge. Perhaps it would be well for speed to be made moderate at drawbridges everywhere. One prominent road has enforced a 30-mile-an-hour limit without suffering any marked unhappiness therefrom. It is to be confessed, however, that in the case of bridges which are opened only once a month—or once in six months—such a limit tends to make a fellow mad. The block system order, in spite of its crudities, is commendable in three important features: it calls for the use of the space interval on all lines; it calls upon the roads to say what they are going to do about it; and it condemns permissive blocking. Concentrating attention and appropriations on busy lines while con-

tinuing bad practice on those less busy is a finance-committee notion which has been allowed far too much influence. With a number of roads operating 20-mile blocks, and some 40-mile, there is no longer any force in the claim that thin lines cannot afford to use the space interval. The commissioners' condemnation of permissive blocking is only what the railroads should expect. Given a superintendent with enough strength of character, and a force of engineers trained by such a superintendent for, say, five years, it is imaginable that permissive blocking of freight trains could be managed with a reasonable degree of safety, but the fact remains that the railroads do not do it. They have had opportunity enough, and have not made good. The next thing is to shorten the blocks and make permissive signaling unnecessary. This circular is also commendable for what it does not say. The commissioners might have pleased some very good people by making more specific and detailed recommendations in certain directions; but they in so doing would have gone outside the legitimate function of government.

We had occasion last week to call attention to a novel occurrence in the railroad world—the action of General Manager Atterbury of the Pennsylvania Railroad in giving to the public a full statement of the results of his investigation of the derailment of a fast passenger train, which had occurred on his road. Scarcely less notable was another thing done by the same company, and noticed also in our last week's issue—a communication conveying a warmly appreciative utterance from the officers of the road, addressed to the station agents of the company, in connection with the announcement of a substantial advance in the agents' pay. Freight and passenger agents are indeed among the most faithful and trustworthy of any railroad's employees, and it is pleasing to see such an expression of approval of men who do not have a grievance committee. Grievance committees—or their spokesmen "higher up"—sometimes seem to extort commendatory words from railroad managers. One of the best things that a railroad manager can do for himself and his company is to confer a benefit on employees before they ask for it. Usually it is very difficult to do this, but it was done in this case. Another fine thing on the Pennsylvania was Mr. Pugh's commendation of Engineman Mattingly and Fireman Barterman for preventing a wreck in one of the tunnels at Baltimore, Md. These men did not perform an unheard-of feat, nor was their commendation by the vice-president so very exceptional; but the incident is striking because of the terrible possibilities of the situation which these men encountered. Two cars of the passenger train which their locomotive was drawing February 25 were derailed in the tunnel, blocking both tracks. At the moment of the derailment Engineer Mattingly blew his whistle to attract the attention of any train which might be coming down in the opposite direction, and Fireman Barterman went forward with an engine torch and tried to flag a passenger train carrying 112 passengers, which came rushing into the tunnel at the moment, running at full speed. The engineer of the train did not see the torch, and as the rapidly moving locomotive came alongside of him Barterman threw his torch into the cab window. This unusual action caused the engineer to stop his train three car lengths from the derailed train ahead of him. A double wreck, in a long tunnel, with a live firebox in the midst of it, is one of the best things in the world to be delivered from.

#### RECIPROCAL DEMURRAGE.

The essential and fatal objection to reciprocal demurrage from the shipper's standpoint—it is ticklish business at the present time to mention any other standpoint—is that the plan could not be worked with even an approach to fairness. The complication of verbal and written requests for cars, of present and future needs; of the relative rights of small and large dealers, of carriers' dexterities as offsetting shippers' blunders, and a dozen other details, would make up a confusing problem which could be effectively dealt with only by a force of state inspectors large enough to duplicate the forces of superintendents, trainmasters and station agents which now manage the freight car distribution of the country. When it comes to fundamental economic laws, the case against these crude legislative propositions—now reported in a dozen different states, including New York—is unanswerable. The very first law—that the most selfish railroad has all possible incentive to move freight promptly and to use its cars with the greatest possible efficiency, nearly covers the case. The things wherein the railroads violate this law are too obscure and difficult to deal with by statute, even

if the railroads were to ask for and encourage such regulation. The ease with which demurrage payments could be made to cover unlawful rebates to shippers is a point which seems to appeal even to short-sighted shippers, and it is to be hoped that enough of them will be informed of this truth to put the brakes on this legislative machinery that is now buzzing so furiously.

One argument which railroad men do not sufficiently emphasize, is that the present demurrage regulations of the railroads are tolerable only because the burden on the shipper is so light. No one claims that demurrage charges are assessed with entire fairness and no one has found any way in which it could be done. But as no one is defrauded the system merits support because, though confessedly a half way measure, it does mitigate the freight car abuse. To penalize the railroads, on the other hand, would be both unsound theoretically and grossly unequal in practice.

The principal arguments on this subject have already been published in many places, and most of the readers of the *Railroad Gazette* are already familiar with them; but for a really strong setting forth of the matter, the argument made on Feb. 15 by Mr. J. M. Daly, of the Illinois Central, before the committee of the legislature of Iowa, deserves a wide reading. Mr. Daly began by reminding the legislators that the subject was in no respect unfamiliar to him, as he and other men in his position in the railroad service, were called upon to make about the same statement before officers of their own railroads nearly every week. Whatever the freight-car distributors of American railroads may have done within the past year or two, they have not been able to do anything that impaired the efficiency of the service, or that even looked like it, without being called upon by their superiors to defend their course. Moreover, Mr. Daly had to make the same defense before another committee of the legislature a year ago. He convinced that committee of the radical injustice of the bill then proposed; and he called upon the present committee to see if any better reason could be found now than then for passing a radical and drastic law. He has also had to testify this year for two hours before the Interstate Commerce Commission.

Mr. Daly made a succinct statement of the situation on the Illinois Central. The company owns 12.7 cars per mile of track while no other road in Iowa owns more than 7.1 cars per mile of track. New cars ordered in November, 1905, are yet to be delivered. The company is paying freight on new cars from Pittsburg to Chicago, about \$30 each, when it could have them brought free if it would run the risk of their being diverted. About 25,000 Illinois Central cars are now on foreign roads, while only 15,000 foreign cars are on the Illinois Central. The I. C. originates traffic and its industries cannot live unless the road furnishes cars to enable them to reach distant markets. The road has 6,000 cars standing on the tracks waiting to be repaired. This delay is due to inability to get material, although agents are sent to factories to promote prompt shipment; and inability to get repair men, even at high wages. Much of this work cannot be done at night, and for Sunday work the company is paying the men double time.

Among the specific reasons for the present scarcity of cars are the great crops of the past two years, unusual damage done to small cars by running them in trains with large cars, and the bituminous coal strike, which suspended coal shipments for three months last summer. The railroads were prevented from stocking up with coal when traffic was dull. Bituminous coal shrinks 4 per cent. by exposure to the air and traders on this account will not order coal in advance of their needs, but the Illinois Central does supply itself beforehand, in spite of the depreciation in value of the coal due to exposure to the weather.

Mr. Daly said that Messrs. Lane and Harlan, of the Interstate Commerce Commission, in their report on the car shortage in the Northwest, had clearly set forth the situation in its true light. They declared that a combination of coal dealers in the Northwest boycotted those who did not agree with them, and helped to bring on the coal shortage; and that the railroads were not parties to this conspiracy. Mr. Daly called upon the bituminous coal men to graduate their prices to the season, as is done by the anthracite shippers, thus tending to prevent congestion in the autumn.

The Iowa bill requires railroads to move cars 80 miles a day, but makes no distinction between short and long hauls, a very unjust feature. Under the proposed bill railroads might rebate to their hearts' content. If a large grain shipper orders 20 cars a day for the shipments of a month, the company can use its cars elsewhere until the statutory penalty has accrued, and yet get the shipper's corn to Chicago in time to meet the market; thus the

demurrage paid to the shipper—say \$10 a car—will be clear profit to him. Small railroads, owning no cars, can, in the same way, agree with large roads for an undue share of the profits of prospective business. If a road is blocked, as by a washout, shippers at competitive points can throw all their orders for cars to that road and force it to pay demurrage.

The claims that railroads had refused cars to certain shippers, and that large numbers of empty cars were standing now at Omaha and elsewhere, were denied by Mr. Daly, and he called upon those who had made the statements to produce their evidence. He showed how the railroads, if they had furnished cars to Iowa shippers during the past month, would have simply aggravated a congestion of grain which exists in Chicago.

The Interstate Commerce Commission handled the car shortage question in a rational way. It called upon the railroads for the facts, and, in dealing with reciprocal demurrage, spoke first of the need of correcting the greatest present evil, which is that railroads do not promptly return each others' cars. The commission advocated laws to compel railroads to furnish a reasonable supply of cars, but recognized that this would necessitate also a compulsory law to get cars returned from foreign roads.

Reciprocal demurrage in one state and not in another would produce endless confusion. The proposed bill exempts perishable freight, and this would produce much injustice. It allows ten days to fill an order for 25 cars, but great injustice might be done by shippers putting in unreasonable orders for 24 cars each. The railroads would be required to fill ordinary orders for cars, but would have no redress when the shipper presented an extraordinary volume of freight. The law relieves the consignee when his shipments are bunched in transit, but the railroad has no remedy when shippers bunch their orders.

Mr. Daly is to be congratulated on going straight to the point and on the entire candor and lucidity of his statements. Verily, the present era of free discussion is producing a tremendous amount of instruction, but at what an enormous cost in the way of teaching these hundreds of solons simple things that they ought to have known before!

#### PROPOSED VALUATION OF RAILROAD PROPERTY.

An official valuation of railroad property has now taken first place in the program of those who, viewing industry from the outside, would reconstruct its methods to suit their economic and ethical ideals, as the one thing needful to effect a perfect reconciliation between the conflicting interests of the traveling and shipping public and the railroad corporations. Last year it was official rate-making which occupied that position, but provision for officially-made rates having now been a part of the statute law of the land for some eight months no rates have been officially promulgated, and the country is advised, semi-officially at least, that the official rate-makers can make little headway until the value of the railroad facilities used has been officially ascertained. This is a plausible suggestion and appeals at once to those who hold that profits are out of place in the railroad industry. Railroads are common carriers, and, as such, have been restricted by the common law since railroad development began, to charges that are just and reasonable. "Why, then," cries the superficial observer, "should not the value of the railroads be ascertained and the rates be fixed so as to afford merely a reasonable return upon that value?" In other words, why not treat an investment in railroad property the same as a loan upon the security of a farm mortgage and provide for a fair and reasonable rate of interest? But that is precisely where the difficulty enters. The public is willing to restrict profits but extremely reluctant about restricting losses. The farm mortgagor fixes a certain rate which is no more subject to diminution than to enlargement. The man who proposes to base railroad rates strictly upon value always has in mind the determination of a maximum rate of return on railroad investments, a return so low as to exclude profits, but he never contemplates fixing a minimum return or guaranteeing the investor against losses. The owner of railroad property, however, insists that if he must assume extensive risk of loss there must be a compensatory chance of profit, and, what is of much more importance, the prospective investor flatly insists that unless this compensatory chance is given he will invest his capital elsewhere. Therefore a perfectly ascertained valuation undertaken as a basis for official rate-making would be either fatuous or futile; it would either be used as a basis of rates and would act as a deterrent to natural railroad construction and im-

provement or these imminent dangers would be realized in time and it would not be utilized at all.

The foregoing discussion assumes that the practical difficulties can be overcome and that a valuation can be officially made and rates can be based upon it with some degree of accuracy. These assumptions, although they may be permitted, for the sake of argument, are not, however, consistent with the facts. It is of the essential nature of value that its accurate measurement must forever elude the most intelligently directed inquiry and that if once discovered its rapid variations would make the discovery worthless for the ends suggested. And it is equally true that even if correctly ascertained it would afford no basis for the activities of the official rate-makers. Value is a relation between one commodity and another commodity or group of commodities. As commonly expressed in terms of money it is a relation between a unit of one commodity and the unit of the circulating medium stated in terms of the number of the latter units which will exchange for one of the former. And, to adopt a rather sketchy definition, the unit of the circulating medium has itself a composite value derived from its exchangeable relation to all other commodities, including the commodity which constitutes the monetary standard. The value of railroad property is, in theory and in practice, determined in precisely the same manner as that of any other commodity. But the values in exchange pertaining to capital goods, that is commodities used to produce other commodities, are the resultant of earning power transmitted into commodities. Railroad value is, therefore, a derivation of railroad earnings. How, then, can it be possible to derive rates from value when value itself is actually and finally a consequence of rates? The idea is absurd, and its absurdity will certainly extend to any attempt to put it into execution. Doubtless, however, those who advocate an official valuation, really mean an official estimate of cost of reproduction less current depreciation. To make such an estimate is very different from ascertaining values, and there should be no confusion of the terms, for such confusion only serves to give a fictitious plausibility to a project which would have few real friends if advanced strictly on its own merits. No business man would enter upon an industrial undertaking that involved large investments of fixed capital if notified at the outset that any future reduction in the cost of producing the machinery or facilities used by him would become an enforced loss which he would be compelled by law to charge off from his capital. Hundreds of thousands of tons of steel rails have lately been laid which have cost \$28 per ton. The price per ton was formerly \$17. If the price should again decrease to the latter figure would any honest American citizen want to be a party to telling the railroads that had paid \$28 per ton that they could, thereafter, be allowed earnings on only \$17 per ton? Yet the cost-of-reproduction principle demands exactly that course. Similarly, the application of such a principle would compel the continued use of antiquated facilities, for no corporation could charge-off at one stroke all that depreciation due to progress which is necessary in order to maintain the highest condition of efficiency which scientific progress permits. These difficulties and objections are insurmountable. If they were not, and a really accurate valuation could be obtained, it would be useless in connection with the problem of rate-making. For it is the determination of the portions of the aggregate income of a particular carrier which shall be derived from each of the multitude of varying services it performs, not that of the aggregate itself, which constitutes the problem of rate-making. The Interstate Commerce Commission is not asked to say whether the total receipts of the New York Central & Hudson River Railroad, for example, are reasonable and just in relation to the value of the property or otherwise, but, on the other hand, whether (let us say) the rate on wheat from Buffalo to Albany is a fair and proper rate. Now the value of the property, or the cost of reproducing it, would aid just as much in solving this question as information concerning the amount of food consumed by a deceased sheep would aid in fixing a fair price for its pelt—and no more. Stripped of every speculative suggestion, students of transportation have always known and always will know, just one proper and possible way of adjusting railroad rates to the demands of industry. That is to charge "what the traffic will bear," not, as President Hadley has wisely said, "What it will not bear," but in the words of the eminent English authority, W. M. Acworth, "tempering the wind to the shorn lamb." That is, fixing rates so as to move the business with a profit to the shipper and to the railroad and its employees. The Interstate Commerce Commission may amuse itself with the idea of an official valuation, but in so doing it will only confuse the question and will not at all lighten its labors or augment its usefulness.

#### London Traffic Problems.

One of the main difficulties hampering the transport system of London is the fact that no clearly marked flow of traffic, as a whole exists. It is true that towards the city and the West End certain definite routes converge from north, south, east and west, but these are chiefly utilized during the morning and evening hours only, and do little towards a thorough solution of the transit problem. With the possible exception of the Central London Railway, which occupies what a high transportation authority has described as the most ideal route for short-distance traffic in the world, there is no one route traversing the entire central district of the city, and even if a sufficient number of east-to-west and north-to-south lines had been laid out, they would still be inadequate for the purpose of conveying the vast amount of traffic that requires to be taken from north to west or from south to east. The peculiar situation has thus arisen that while it is a comparatively easy matter to effect a short and direct journey from any suburban or outlying point to the heart of the city, it is in most cases a difficult matter to travel between a point to the east, for instance, and another in the south. London is, of course, not one city, but an agglomeration of self-contained towns. Places such as Ealing, Finsbury Park or Croydon, each with its own theaters, banks and modern shops, contain within them everything to satisfy their inhabitants, who, unless their daily occupations take them up to commercial London, do not require to travel frequently towards the center of the Metropolitan area. When suburban lines were first planned, this development of the suburbs was entirely unforeseen. One result is that no main line entering London makes a profit on its short-distance suburban traffic to-day, and at the same time much-needed facilities for short-distance journeys are lacking. This is one of the reasons explaining the popularity of the omnibus, in itself a somewhat objectionable and distinctly antiquated vehicle, that in no small degree contributes towards the existing congestion of the main thoroughfares. Sooner or later the railroads will have to realize that a vast proportion of traffic in London will not utilize a railroad station unless compelled, but will prefer to travel by means of lines of communication running through the principal streets. As the existing road vehicles, even including the motor omnibus, are inadequate for the purpose, the only possible solution is that the tramways, which are already to be found within the extremities of the most crowded area, be extended to traverse that area centrally. This would mean nothing more than bringing London up to the standard not only of all foreign cities of importance, but also of every town in the provinces.

#### Interstate Overcharges Not Collectible Under Common-Law Rights.

In the case of Texas & Pacific, plaintiff in error, against the Abilene Cotton Oil Company the Supreme Court of the United States has announced a decision holding that the Interstate Commerce law has repealed the common law right of a shipper to sue in the courts for the recovery of damages resulting from the payment of unjust and unreasonable charges to a common carrier subject to the provisions of that act.

Mr. Justice White, announcing the opinion of the court, said that it could not be doubted that at common law the shipper had a right of action in damages; that the act to regulate commerce did not expressly abrogate this right, and that the contention that it was abrogated rests on the proposition that this result was accomplished by implication. Continuing he said: "In testing the correctness of this proposition we concede that we must be guided by the principle that repeals by implication are not favored, and indeed that a statute will not be construed as taking away a common law right existing at the date of its enactment, unless that result is imperatively required; that is to say, unless it be found that the pre-existing right is so repugnant to the statute that the survival of such right would in effect deprive the subsequent statute of its efficacy; in other words, render its provisions nugatory." He finds that this would be the effect of the survival of the right. The opinion points out that if a shipper could go into court and obtain relief he would receive a preference not enjoyed by those against whom the schedule of rates was continued to be enforced, as a judgment in favor of a single shipper would not compel a change in the schedule rate filed with the commission and posted in conformity with the law. It is pointed out further that different courts might reach different conclusions as to the reasonableness of the same rate and that the standard would differ in different jurisdictions; and that if the power to originally hear complaints existed in both the courts and the commission there might be a divergence between the action of the commission and the decision of the court. The court, therefore, held "that a shipper seeking reparation predicated upon the unreasonableness of the established rate must, under the act to regulate commerce, primarily invoke redress through the Interstate Commerce Commission, which body alone is vested with power originally to entertain proceedings for

the alteration of an established schedule because the rates therein are unreasonable."

The judgment of the court below, the Court of Civil Appeals for the Second Supreme Judicial District of Texas, is reversed and the case remanded for a new trial.

#### Prussian Tests of Superstructure.

The Prussian State Railroads have recently established permanent testing tracks for the purpose of testing matters relating to superstructure—rails, joints, ties, spikes, bolts, super-elevation, kinds of ballast, etc., at various speeds and with different kinds of rolling stock. The tracks consist of two parallel tracks 400 meters apart and 250 meters long, connected at the two ends by semi-circles of 200 meters radius, making a total length of 1,756 meters, or 1.09 miles. On this track for the present electric locomotives supply the motive power, and provision is made for running trains around the track 20 hours per day, which at certain speeds will make possible 570 passages of a train per day. The trains are run without a motorman, there being but one train on the track at a time, from which the current can be cut off from without; and the highest speeds can thus be ventured with danger only to road and rolling stock, though the purpose is not to test speeds higher than now practiced, but simply the behavior of the different kinds of superstructure. The experiments began with four kinds of superstructure, three rail profiles and four kinds of rail joints, each kind extending from the middle of a tangent to the middle of the adjacent curve; the rails lie alternately on wood and on metal ties, and different woods and different patterns of steel ties are used. The first tests have chiefly in view to determine: 1. The effect of ballast material and form of ties on proper inclination of the track. 2. The testing of the different kinds of joints. 3. The wear of rail heads. The tests of each kind of superstructure are to be made successively on five different kinds of ballast: pit gravel, river gravel, basalt, graymacke and granite broken stone.

The railroad authorities say there is greater uncertainty as to the best methods of construction and maintenance of superstructure than in anything else relating to railroads, and they purpose to do what seems possible—settle such questions. Doubtless the tests will be made with German thoroughness, and the results recorded fully and clearly and published for the information of the world. It is to be hoped that they will be followed and studied by those responsible for track in this country, where there certainly is need of knowledge if anywhere. Probably one-half of the cost of a single recent accident due to failure of track would pay for all these Prussian experiments for some years to come. It may be humiliating for a country with more than 200,000 miles of railroad to look to a country with less than 20,000 for the settlement of matters so tremendously important; but it will be disgraceful if we do not take advantage of the knowledge so attained and freely offered.

#### NEW PUBLICATIONS.

Railway Signal Association; Proceedings for January, 1907.—C. C. Rosenberg, Secretary, Bethlehem, Pa.

The proceedings of the meetings of the Railway Signal Association, which are held in January, March, May, September and October, are henceforth to be printed and published in their final form immediately following each meeting, so that the proceedings of the early part of the year will not appear in the pamphlet issued after the annual meeting in October. The number for the January meeting of this year has now been issued. It is made up of 54 pages of reading matter and 44 pages of advertisements. The March meeting is to be held at the Great Northern Hotel, Chicago, on Monday, the 18th, as before announced.

#### CONTRIBUTIONS

##### The Profitable Weight and Speed of Freight Trains.

Sacramento, Cal., Feb. 23, 1907.

To THE EDITOR OF THE RAILROAD GAZETTE:

I have read with much interest Mr. Wild's article appearing recently in the *Railroad Gazette*, relative to the profitable weight and speed of freight trains. It is of more than usual interest to me as it illustrates the problem in a somewhat different way, and also tends to uphold the stand I took in an article entitled "What Should Be the Maximum Economical Load for a Locomotive?" written for the Pacific Coast Railway Club, and published in their Proceedings of December, 1903.

Admitting that conditions of track, power, etc., will to some extent govern the train that can be hauled, at the same time, under the present conditions of traffic prevailing throughout the country, the essential point is to get the cars over the road in the

shortest possible time, and incidentally to do it in the most economical manner. In the article mentioned above the writer says: "In determining the economical load for a locomotive, one of the most important factors to be considered is time. For instance, if we simply compare the performance of two single trips, one with the maximum load, and the other with a lighter load, the maximum load may be the more economical, revenue and all cost of transportation considered, notwithstanding the locomotive may burn double the amount of the fuel and the wages of trainmen be twice as much as with a lighter load." This will also hold good if any number of single trips is considered.

As a rule it would seem that most operating officers base their loading and movement of trains on the showing a single train can make between any two terminals. There is hardly a doubt that a single train will show the greatest net revenue when the maximum tonnage is taken that can be hauled over the road, regardless of fuel, wages or time consumed in making the trip, granted, of course, that the run is made within reasonable limits.

Using Mr. Wild's figures and assuming an engine run of 100 miles between terminals, the 40-car train would show a net revenue of \$325 as against \$279 for the 35-car train, and \$214 for the 28-car train, etc. But in cases of congested traffic, where a large number of cars are to be moved in the shortest possible time, it will be found that a speed of from 20 to 25 miles per hour will move the greatest number of cars in a given time. Our theoretical figures not only show this, but I think actual service conditions will verify these figures. To explain why a speed from 20 to 25 miles per hour is better than speeds higher or lower, we need to consider the fact that the hauling power of a locomotive is at its maximum from starting, up to a piston speed corresponding to a train speed of from six to eight miles per hour, after which its power falls quite rapidly as the speed increases. This decrease in hauling power when taken in conjunction with speed and time gives us comparative figures which show the critical speed as being about 20 miles per hour.

As to the feasibility of running freight trains at their most profitable speed, there should be no doubt, that is, when roads are equipped with heavy rails and otherwise fitted for heavy traffic. We may except cases, however, where a large number of trains have to be moved over a single-track line, with the problem of meetings and delays on sidings for opposite trains, will to some extent govern and limit the average speed at which the trains can be gotten over the road.

So the all-important question seems to be, not whether lighter load and faster train is the most economical, but why operating officers who know this still insist on loading an engine until it has to simply drag over the road.

As the figures shown in table prepared by Mr. Wild for the different train speeds are based on an even number of hours, without reference to any particular type of locomotive or actual conditions in service, I thought it might be interesting to have figures that would show results under these conditions, and I have prepared a table (printed herewith). While it practically corroborates conclusions that Mr. Wild makes in his article, it shows the result in a little different way.

Speed, mls. pr. hr.	A	10	15	20	25	30	35	40	45
Tractive power.....	B	32,500	28,200	24,000	20,300	17,000	14,000	113,000	9,266
No. cars in train.....	C	40	34	29	25	21	17	14	11
Pr. ct. of decrease D ..	15	27½	37½	47½	57½	65	72½		
Pr.ct. increase speed E ..	50	100	150	200	250	300	350		
Hrs. per round trip F ..	30	22	18	15.6	14	12.8	12	11.3	
No. cars hauled .....	G	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Time consumed, hrs. H .....	I	3,750	3,234	3,096	3,120	3,332	3,763	4,284	6,130
Additional time for lay over .....	I	93	80	72	78	82	93	106	152
Total hrs. consumed J .....	J	3,843	3,314	3,168	3,198	3,414	3,856	4,390	6,282

I have taken an average type of heavy freight engine weighing 173,000 lbs., 22-in. x 26-in. cylinders, and have supposed a case where 5,000 loaded cars are at both terminals, the engine run distance being 120 miles between terminals. Have allowed four hours lay over at home terminal, two hours at the other, and 10 hours lay over every 10 days for washing boiler. The problem is to show the shortest number of hours in which the cars could be moved by one locomotive under above conditions. The table shows these conditions for speeds of 10 up to 45 miles per hour, also tractive or hauling power of the engine at these several speeds. Line "C" shows the number of cars that could be hauled by this engine at the corresponding speed. To show the relative difference between the percentage of decrease in the number of cars and corresponding increase in speed, I have added lines "D" and "E." It will be noted that by a 27½ per cent. reduction in the number of cars the speed of the train may be doubled. This very closely compares with figures given by Mr. Wild.

This table based on the actual hauling power of the locomotive at the various speeds gives results showing that 5,000 cars could be moved from each terminal in the shortest number of hours at a train speed of about 20 miles per hour.

As to whether the net revenue accruing from the train hauled would show figures corresponding to results shown in number of hours that a given number of cars could be moved, or not, I am

not prepared to say. However, there is no doubt that a reduction in the load will also result in a reduction in cost of operating, principally through the consumption of less fuel. We may theorize and make figures to show what a locomotive ought to do, but somehow under actual service conditions these figures are seldom realized. This is because it is almost impossible to calculate on the varying conditions under which locomotives and trains have to be moved.

While it is no doubt true that cars are in many instances held too long for loading and unloading, it is also true that trains are overloaded and much valuable time wasted in getting over the road. A certain amount of time is necessary for the placing and unloading of the cars after arrival, and the more expeditiously the cars can be gotten over the road the less delay should be experienced in getting the cars loaded for further movement.

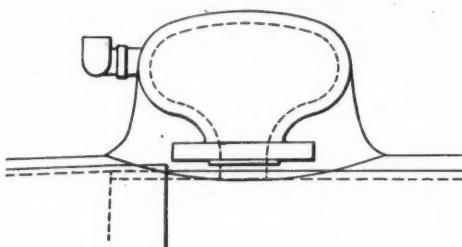
In conclusion would say that I think there is hardly a doubt that the lighter train would be not only the more economical, but would handle the cars in a shorter time. This, however, is not the only advantage to be obtained with the lighter train: the liability of engine failures would be lessened, locomotives would give more continuous service, cost of repairs to locomotive would be lessened, and there would be fewer car failures, and not the least important, the power required to handle the traffic would not be as much as with the heaviest trains.

C. F. NOYES,  
Supt. S. P. Co. Sacramento Shops.

#### Consolidation Locomotive for the Nippon Tetsudo Kwaisha Railroad.

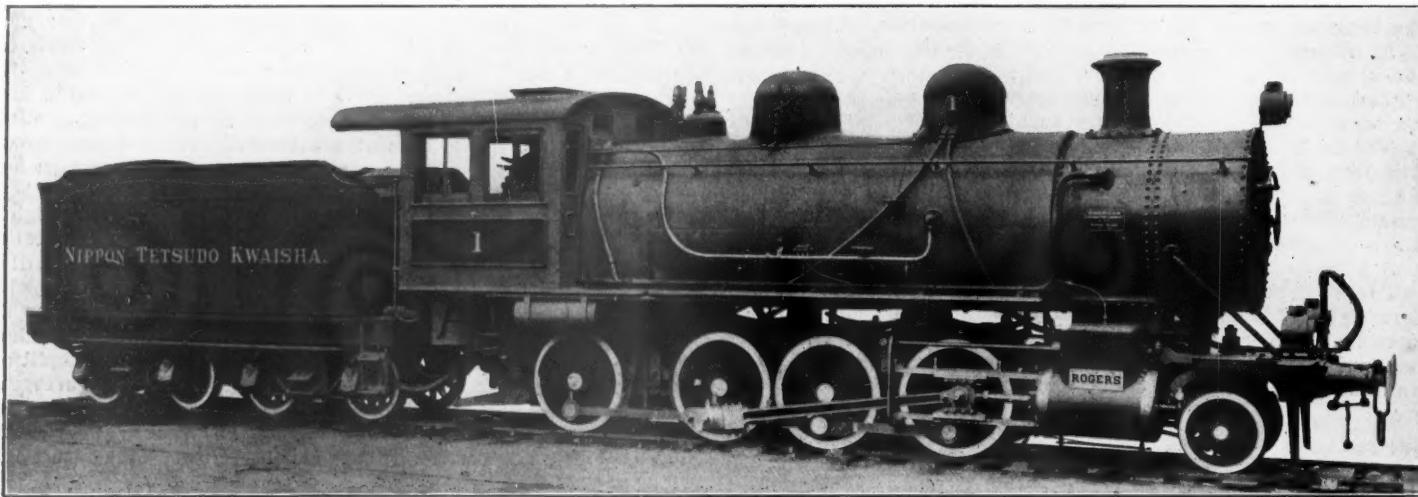
The American observer is inclined to believe that transportation facilities in Japan are somewhat handicapped by the narrowness of the railroad gage. Yet despite this drawback it is apparently possible to design engines of considerable weight and power to run on

the designers have built an engine with a total weight of 114,600 lbs., with a boiler of 62½ in. diameter inside the smallest ring. The driving wheels are but 44 in. in diameter and the counterbalancing of the heavy rods and reciprocating parts has necessitated the use of exceedingly large weights that are crescent shaped and reach from the inside of the tire nearly to the hub.



Whistle and Safety Valve Dome.

In general arrangement and design the engines are distinctively American, with some features of interest in detail. The spring suspension, for example, follows the practice of equalization, but in this case the truck equalizer has the short end in front, thus throwing somewhat more than half as much weight on these wheels as there is upon the drivers, the two forward pair being equalized with the truck and the rear two pair separately, a modification of an earlier practice of equalizing only the front pair of drivers with the truck. The valve motion is of the Stephenson type with short eccentric rods and the link just back of the second driving axle, with a transmission bar to carry the motion on to the rocker set between the first and second drivers. This transmission bar is bent to span the second axle and is carried at the rear end by a hanger with a broad

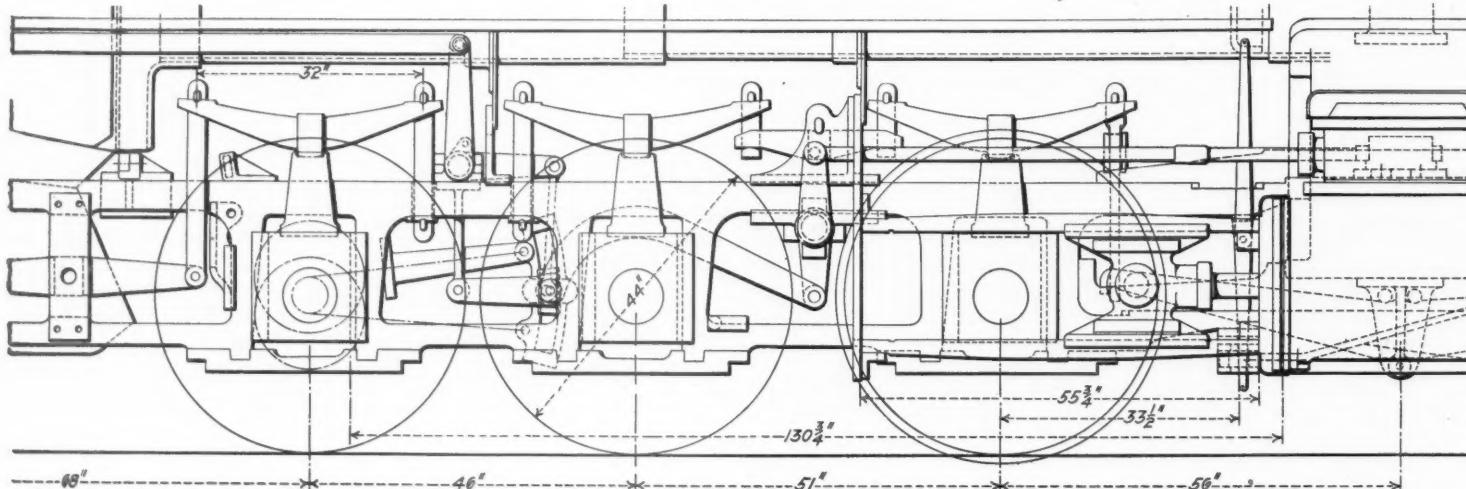


Consolidation Locomotive Built for the Nippon Tetsudo Kwaisha Railway of Japan by the American Locomotive Co.

these roads; engines that would have been considered quite up to all of the demands of American railroads a few years ago. An example of work of this character is to be found in an order for twelve consolidation locomotives that has recently been filled for the Nippon Tetsudo Kwaisha Railroad by the American Locomotive Co. The limitations were fixed at a height of 12 ft. 5 in. and a width of 8 ft. 5 in. Within these sectional dimensions and on a gage of 3 ft. 6 in.

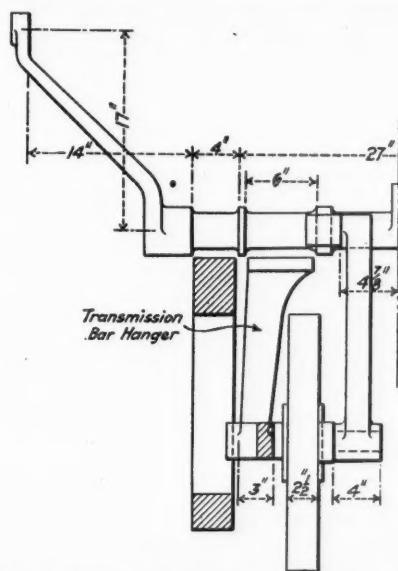
foot, as shown, that is bolted to a box having a long bearing on the lifting shaft.

The whistle and safety valve dome, while having the external appearance, with its casing, of a low small dome of conventional shape is really a pear-shaped casting bolted to a flange over a small opening in the top of the boiler. This avoids the use of any reinforcement and simplifies construction. The regular steam dome



Spring Suspension and Valve Motion of Consolidation Locomotive of Nippon Tetsudo Kwaisha R. R.

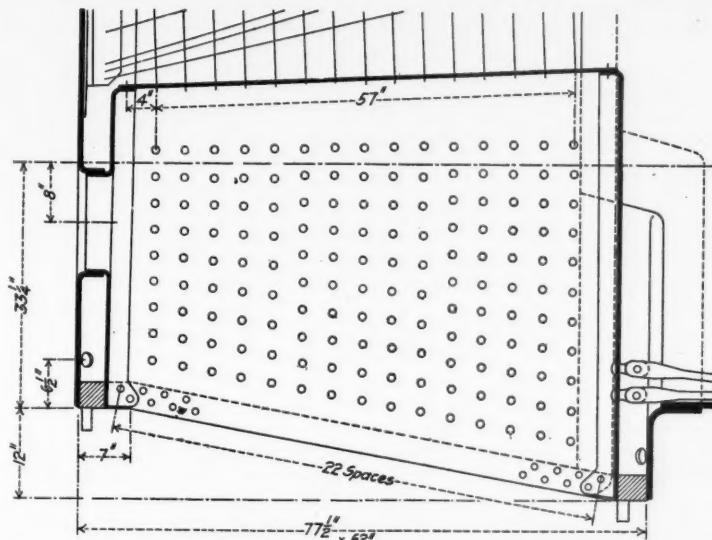
is also without any reinforcing plate about the opening, but is provided with a very heavy stamped base 1 in. thick, held to the shell by 1½ in. rivets. The dome cap is also stamped, as usual, and is of the same thickness as the base. The same idea of ample weight appears in other parts of the boiler structure. The shells, of 63½ in. diameter for a pressure of 180 lbs., are 11/16 in. thick, which puts a stress of 8,360 lbs. per sq. in. on the metal. The tube-sheets are also heavier than usual in that they each have a thickness of ¾ in. The seams of double-welded sextuple riveted butt joints for the horizontal seams and double riveted for the circumferential seams with



Section of Valve Motion Showing Transmission Bar Hanger.

1½-in. rivets spaced 3½ in. between centers or practically three times the rivet diameter, a rule that has prevailed for time out of mind. The firebox staybolts are 1 in. in diameter and instead of being spaced and set in straight lines are in three vertical groups, whose inclined lines break connections with the next group. This at the front as compared with the rear, there being a difference of arrangement was brought about by the greater depth of the firebox 12 in. in the slope of the foundation ring in 67½ in.

The valves are of the Richardson type with outside admission. Cast steel is used for the wheel centers of all wheels on both engine



Firebox of Consolidation Locomotive for Nippon Tetsudo Kwaisha Railroad Showing Arrangement of Staybolts.

and tenders. In the case of the driving wheels the tires are shrunk on and then held in addition by set screws.

The following are some of the principal dimensions of these engines:

Cylinders, diameter	18 in.
Piston, stroke	24 "
Wheels, diameter, driving	44 "
" " truck	28 "
" " tender	33 "
Wheel base, driving	13 ft. 9 "
" total engine	21 " 7 "
" engine and tender	45 " 21/4 "
Boiler, diameter	63 7/8 "
Boiler, material	Steel
Firebox, length	69 in.
" width	54 "
" thickness, crown, side and back sheets	5/8 in.
" thickness, tube sheet	7/8 in.
" material	Steel

Tubes, number	250
" diameter	2 in.
" length	13 ft. 1 in.
" material	Charcoal iron
Heating surface, tubes	1,702 sq. ft.
" " firebox	90
" " arch tubes	18 "
" " total	1,810 "
Grate area	25.8 "
Steam pressure	180 lbs.
Weight on drivers	101,600 "
" truck	13,000 "
" total of engine	114,600 "
" tender	78,000 "
Tank capacity, water	3,600 gals.
Tank capacity, coal	.5 tons
Fuel	Soft coal
Tractive power	27,040 lbs.

Weight on drivers	= 3.73
Tractive power	
Total weight	= 4.24
Tractive power	
Tractive power x diam. drivers	= 584.4
Heating surface	
Heating surface	= 70.16
Grate area	
Firebox heating surface	= .06
Total heating surface	
Weight on drivers	= 56.13
Total heating surface	
Total weight	= 63.31
Total heating surface	
Volume of 2 cylinders = 7.2 cu. ft.	
Total heating surface	= 25.14
Volume of 2 cylinders	
Grate area	= 3.58
Volume of 2 cylinders	
Equivalent of tube heating surface in firebox heating surface	= 471.4 sq. ft.
Total equated heating surface in firebox heating surface (Vaughan formula)	= 579.4 sq. ft.
Equated heating surface	
Grate area	= 23.15
Weight on drivers	
EQUATED HEATING SURFACE	= 170.05

#### Carnegie Steel Ties on the Bessemer & Lake Erie.

We have received the following information from H. T. Porter, Chief Engineer of the Bessemer & Lake Erie. The company placed an order last fall, for 1907 delivery, for 140,000 Carnegie I-beam steel ties. At present there are more than 100,000 steel ties in the track, some of them on 6 deg. curves. Between Albion and North Bessemer, Pa., the company is working engines with about 183,000 lbs. on the drivers. Between Albion and Conneaut Harbor, where there are stretches of steel ties on 4 deg. curves, the company is operating engines with 225,000 lbs. on the drivers. The ties are giving very satisfactory service, and the company considers the steel tie track very much more stable than the wooden tie track. There has been no trouble from broken rails. In answer to a question about the comparative ease or difficulty of shimming the track where steel ties are used, Mr. Porter replies that the company is not much troubled by track heaving from frost.

A Berlin newspaper, organ of the most conservative and religious classes, and which therefore must be speaking the truth, describes some methods of car-heating observed in this country which are perhaps not very familiar to readers of the *Railroad Gazette*. The writer says that on the "Big Four" the cars are made with hollow walls, in which asbestos plates inclosed in platinum wires are introduced in winter. A dynamo sends a current through the wires and heats the car evenly and beautifully. In the summer, on the other hand, cold water is circulated through these hollow walls, and the interior of the car rendered to a balmy, spring-like temperature, highly agreeable in the dog days. The heating apparatus, however, fails when a train is stalled, and the writer calls to mind how in the Royal Gorge on the Denver & Rio Grande he was once blockaded for three days. When the passengers were nearly frozen, with that readiness of resource so common among Americans, they organized themselves into three shifts, and ran the dynamo by hand night and day, and so preserved their lives, and among them that of this contributor to the *Journal of the Cross*.

**The Harriman Investigation.**

The following are further extracts from the testimony of witnesses before the Interstate Commerce Commission at New York in its investigation of the Harriman roads. An abstract of most of Mr. Harriman's testimony was published last week:

**THE ST. JOSEPH & GRAND ISLAND.**

By Mr. Kellogg:

Q. Mr. Harriman, you are familiar with the St. Joseph & Grand Island Railroad? A. Fairly well so; yes, sir.

Q. I notice by the statement that the Union Pacific Railroad purchased the stock of the St. Joseph & Grand Island since July 1, 1906? A. Yes, sir; that is right.

Q. Of whom were those stocks purchased? A. Purchased from me, and so stated in the record.

Q. When did you acquire those stocks? A. I decline to answer. Q. Is not the St. Joseph & Grand Island a parallel and competing line to the Union Pacific? A. I should say not.

Q. It starts from St. Joseph— A. It was part of the old system of the Union Pacific originally.

Q. And it starts from St. Joseph and runs to a point on the Union Pacific at Grand Island? A. Yes.

Q. Prior to the reorganization of the Union Pacific the St. Joseph & Grand Island was owned, or at least operated, by the Union Pacific, was it not? A. I believe it was.

Q. During the reorganization or prior to the reorganization, is it not a fact that the receivers of the Union Pacific refused to assume the obligations and burden of operating the St. Joseph & Grand Island? A. That I don't know. I know very little about the Union Pacific prior to the reorganization.

Q. And for a number of years after the Union Pacific was reorganized the St. Joseph & Grand Island was an independent line? A. Absolutely.

Q. Who were the interests in the board that had the direction of its affairs prior to the acquisition by you? A. Prior to the acquisition by the Union Pacific?

Q. Yes. A. Well, it was, I think, very largely I that had an influence, or through some of my associates.

Q. That was after your purchase or prior to your purchase? A. That I don't know.

Q. You don't know? A. I don't remember.

**THE PURCHASE OF SOUTHERN PACIFIC.**

By Mr. Severance to Otto H. Kahn, managing partner of Kuhn, Loeb & Co.:

Q. The first large financial transaction in which the Union Pacific embarked after its reorganization, was the acquisition of the Southern Pacific stock, was it not? A. Correct.

Q. Who conducted the negotiations for the acquisition of that stock? A. Those negotiations were conducted by us as fiscal agents for the company, and Mr. Harriman.

Q. With whom were the negotiations had? A. With A. G. Huntington and Speyer & Co.

Q. They represented a large block of Southern Pacific stock which controlled the property? A. Yes.

Q. At whose instance did you undertake those negotiations? A. Largely at our own instance, and, of course, in conference with Mr. Harriman.

Q. Well, you did not undertake the purchase of those securities as an investment for your house, but you undertook the purchase with the intention of turning them over to the Union Pacific, didn't you, after conversing with Mr. Harriman? A. If the Union Pacific wanted them, after mature deliberation by its board. If they did not want them, we would have been perfectly willing to keep them and sell them to somebody else, and it would have been very easy to sell them to somebody else.

Q. Now, Mr. Kahn, before you bought those securities or entered into any contract to buy them, didn't you have a thorough understanding with Mr. Harriman that the Union Pacific would take them, of course subject to the approval of the board? A. We had this understanding: That we were bound to offer to the Union Pacific. If the Union Pacific did not want them or for any reason could not buy them, then we were stuck with them.

Q. Didn't you have an understanding with Mr. Harriman that he would take them? A. Mr. Harriman certainly was in favor of taking them, provided they could legally be bought, and providing the remaining members of the board were of the same opinion.

Q. Did you not consult other members of the board prior to the acquisition of the securities, besides Mr. Harriman? A. Prior to the contract for the acquisition, I don't believe so. It is a matter of seven years back, and I cannot remember every single step that was taken in that connection, but in a general way we undertook to take the risk of buying that stock. I remember the executors of the Huntington estate wanted a bankers' obligation, and were not

satisfied with a corporation obligation; they wanted a bankers' obligation to protect them, and there was a question when a certain amount of cash down had to be paid at once before the Union Pacific or any other railroad company could act or get together, and we simply stood in the breach and took the risk.

Q. You wrote a communication to the board, didn't you? A. Yes.

Q. In which you said: "We have purchased 432,700 shares of the Southern Pacific Company of Kentucky, to be paid for as follows: 144,233 shares on February 11, 288,467 shares on or at our option before July 10, with interest at 4 per cent. per annum from February 11, all said shares to be deposited with a trust company until entire payment is completed. We have further purchased the following shares: 200,000 shares to be paid for on or at our option before March 4, 45,000 shares to be paid for, one-half on February 5 and one-half on February 8. The average prices at which we have made the above purchases, exclusive of interest accruing, is \$50.6146 per share." That is an accurate statement, isn't it? A. Certainly.

Q. That is stock you bought from Speyer & Co. and had arranged to buy from Speyer & Co. and Mr. Huntington? A. Yes.

Q. And then you further add: "In order that your holdings of Southern Pacific stock may aggregate 750,000 shares, we agree to sell to you on March 4, 1901, 72,300 additional shares at the same price—viz., \$50.6146 per share, plus interest at the rate of 4 per cent. from February 11, 1901." From whom did you buy that stock? A. We bought it in the market.

Q. What were the ruling prices of Southern Pacific stock at that time? A. At the time that letter was written, I believe about 49—between 48 and 49.

Q. So you took the chance of its going up above \$50 a share? A. Which it did.

Q. Upon that purchase price, you say you were "also to be paid by the company \$2.50 a share upon said 750,000 shares, of profit to us for the risk assumed in making these purchases"? A. That is right.

Q. The risk you assumed was the risk that the Union Pacific board would not approve of Mr. Harriman's provision relative to the acquirement of this stock, was it? A. No; that was only one of the risks. There was an additional risk.

Q. What was it? A. The other risk, to which our attention was called by our counsel, was a legal risk. At that time it was not certain whether the Union Pacific or the Oregon Short Line could legally acquire the Southern Pacific stock.

Q. Why? A. Because the Southern Pacific Co. was a holding company and not a railroad company, and that defect, if it existed, was later on cured by appropriate legislation, I believe. But at that time that risk existed and was forcibly called to our attention by our counsel, and we were told that we were incurring a very substantial risk in standing in the breach.

Q. You were a member of the executive committee at that time. What was the purpose of the Union Pacific in acquiring this stock? A. As I said to you before, I am a pretty poor witness on railroad questions, and while I was a director of the Union Pacific, of course I am not an expert on railroad matters; but I understood in a general way that the main purpose of the Union Pacific in acquiring the Southern Pacific was to be certain of not being shut off at Ogden from reaching San Francisco. At that time it had become quite apparent that the Southern Pacific would not remain an independent line, that one or another of the large systems would get control of it. Reports had come to all of us of negotiations which were being carried on by other large systems to acquire the Southern Pacific. It was, as I understood it, of vital importance to the Union Pacific not to shut off at Ogden, and to continue to be able to use the line from Ogden to San Francisco. Naturally I also understood that the north and south lines in California were valuable feeders. I always understood also that the Southern Pacific was bought by the Union Pacific for advantages which it offered as a connecting line, and it never entered our minds at that time that it could be in any sense considered a competing line.

Q. That never entered your head? A. That never entered our heads at the time.

Q. You did not know that traffic moved to California both ways, both over the Union Pacific and over the Southern Pacific's Sunset Route? A. I was not generally posted on these questions. I only know we bought the Southern Pacific because it was represented to us that it was a necessary supplement to the Union Pacific, and if we did not buy it the Union Pacific would be bottled up at Ogden.

Q. The Union Pacific owned the line to Portland? A. The Union Pacific owned the line to Portland, to northern California, yes.

Q. So that they could not shut you off from access to the Pacific Ocean? A. But they could have shut us off from access to San Francisco by the Southern Pacific, which we had always used theretofore, I believe.

Q. And so, for the sake of getting a line 800 miles long, which you regarded as essential to the Union Pacific, you bought six or

seven thousand miles. Is that the idea? A. No; I said the lines in California were doubtless an additional inducement.

Q. Was not the Southern Pacific any inducement, the Sunset Route? A. I don't believe it was. I understood at that time that it was a nuisance. It certainly was not an inducement at that time.

Q. You regarded it as a nuisance? A. As a nuisance.

Q. Do you still regard it as a nuisance? A. I don't know.

Q. I do not think there is any question, from what we have learned in the examination in the West, that Mr. Stubbs had made that quite a nuisance to the Union Pacific. A. I don't know.

Q. I think you are right. That had been made a nuisance. And because it was a nuisance, and because you wanted a connection into San Francisco for the other reasons you have given— A. Excuse me. You put it just the other way on. I said that the necessity of acquiring with the Southern Pacific the line which you call the Sunset Route was the very opposite to an inducement. The Union Pacific did not buy the Southern Pacific because the Southern Pacific contained that Southern line, but it bought it in spite of that.

Q. That is, the southern line was forced on you? A. I think if at that time the southern line could have been cut off from the Southern Pacific, it would have been preferable to all of us.

Q. Up to a year ago, when you retired from the board, were you still of the same mind that you would be glad to have the Southern Pacific's Sunset Route cut off from the rest of your system? A. I believe under the present management that it would have been much improved and made valuable.

Q. Then, as I understand it, there is something that transpired in the four years from 1901 to 1905, when you retired from the board, that made you change your mind about the desirability of divorcing the Sunset Route from the rest of the Southern Pacific system? A. I never had any opinion about it.

Q. Do you know whether the balance of your executive committee, so long as you were a member of that committee, were of the opinion that it would be a good thing for the Union Pacific to lop off the Sunset Route? A. That question never came up, because it was not a practical question.

Q. That feeling that the Sunset Route was a nuisance was never discussed after that time? A. I want to make clear that it was not a nuisance to the Southern Pacific, but I want to bring out again that in my mind, and from what I then heard from those more competent to judge than I, the Southern Pacific was acquired because of its connecting features, and not because of that Sunset Route, which at that time was, I believe, not a profitable part of the system.

Q. And that situation changed, did it, after the new management came into control, so that you ceased to regret having to take in the competing line to the south? A. I have no doubt the new management greatly improved that road.

#### THE PURCHASE OF NORTHERN PACIFIC.

Q. Mr. Kahn, when was the idea of acquiring Northern Pacific stock first taken up by the Union Pacific? A. That idea started with the purchase by the Northern Pacific and Great Northern of the Burlington. Mr. Harriman and we, in April, 1901, owing to the acquisition by the Northern Pacific and Great Northern of the Burlington, became convinced that it was very desirable that a controlling interest, or at least an influential holding, of Northern Pacific, should be concentrated in friendly hands, pending decision of the question. It was not a matter that could be decided in a day or a week, or four weeks, or six weeks, pending the decision of the question of the action, if any, the Union Pacific intended to take in the matter; and it was in pursuance of that idea, and in pursuance of the necessity which we saw for having such a concentrated holding, and knowing also at the same time that the Northern Pacific was selling at a very cheap price; knowing, also, as we did, of certain plans which were on foot for increasing the value of Northern Pacific; being certain that the purchase of Northern Pacific at the then prevailing prices was an advantageous purchase under any circumstances; being perfectly willing to hold the stock for ourselves if the Union Pacific did not want it; in fact, preferring to hold the stock for ourselves if the Union Pacific did not want it, but at the same time feeling morally bound to give the Union Pacific opportunity to buy it from us if they wanted it—taking all those things into consideration, we started buying Northern Pacific stock.

Q. What advantage to the system did you think it would be to acquire the Northern Pacific shares of stock? A. That is again a railroad question. In a general way, it is quite apparent that it was of great importance to the Union Pacific to acquire a holding in Northern Pacific, so as to enable it to get its connection into Idaho, Washington, and other states and territories in the Northwest. The acquisition of the Burlington by the Northern Pacific and the Great Northern tended, as I understood it, to shut out the Union Pacific from that territory in the Northwest, and we considered that if it were possible for the Union Pacific to have a substantial holding, and possibly a controlling holding, in Northern Pacific, the Northern Pacific in its turn having half of the control of the Burlington, it would be a very beneficial thing for the Union Pacific. At the same

time we were convinced that the stock was selling far below its real value, and the result has shown that our judgment was correct.

#### THE CHICAGO & ALTON BOND ISSUE.

By Mr. Kellogg to C. W. Hillard, Comptroller of the Chicago & Alton since October last:

Q. In what condition did you find the Chicago & Alton—the consolidated company? A. Money was absolutely necessary. There were some current funds, but they had contemplated the construction or completion of a 34-mile road between a point near Springfield, Ill., and Murrayville, and we found that there were not sufficient funds to build this line. I found that there was a large sum required for its completion, and in looking for ways and means I began to examine their mortgages. I discovered that that road, which was not constructed at all, had been already mortgaged, and that therefore there was no possibility of getting any bonds on it, unless we could float a second mortgage, which was very poor security.

Commissioner Lane: Do I understand they had already placed a mortgage on a road that had not been built? A. Yes. The Alton had conveyed to a trustee a line of railroad which they had not constructed and which they had provided no funds to construct.

Mr. Kellogg: It simply mortgaged a road which it proposed to build and issued all the bonds, leaving no bonds to build the road. Isn't that true? A. That is right.

#### THE 30 PER CENT. ALTON DIVIDEND.

In regard to the dividend of 30 per cent. paid on Chicago & Alton stock to make up for amounts spent by the management of the road during a long period of years before its reorganization by the Harriman syndicate, Mr. Hillard said: It seems to me I have never known a case like this, where they have gone back from 1898 to 1863 and capitalized moneys which have been appropriated. Each Board of Directors has a perfect right to appropriate surplus earnings. They have the option to pay it in dividends or set it aside, and when they have exercised that option it is final. No subsequent Board of Directors can revoke it. If they did, the principle would be just the same in regard to the appropriation for dividends. Why could not a subsequent board revoke an appropriation for dividends, and why could we not revoke that 30 per cent. special dividend now?

Commissioner Lane: That is just my point exactly. They could have said, "Instead of a 5 per cent. dividend, that dividend was unreasonably low, and we should have declared a 10 per cent. dividend. We should have declared a 10 per cent. dividend for 10 years preceding, and had a 50 per cent. dividend for the accumulation of those 10 years of dividends that were not paid."

Mr. Hillard: I think there is another factor that would enter into that. I don't think a railroad company, having appropriated its money and absolutely disposed of it, would have a right again to pay a dividend without any money and sell bonds to get the money for the dividend.

Mr. Kellogg: Of course, the same principle applies as to operating expenses, does it not? A. I think the same principle, but to a larger degree, if anything, because the charges which railroad auditors and accountants make to operating expenses are generally closely watched by the management, for their own credit; the management does not allow any doubtful charges to be made to operating expenses because of the increases of the percentage they operate on. When they get through operating, the surplus belongs to the directors, and the management does not care how they appropriate it. So that it is more important that operating expenses should be carefully watched than it is that surplus income should be carefully watched.

Q. If those things could be done and revoked from time to time, as the directorate changes, would not a practice of that sort destroy the integrity and uniformity of railroad accounts generally? A. It would upset the whole system.

#### Lake Superior Iron Ore Shipments.

The *Iron Trade Review* gives the following figures of iron ore shipments from the Lake Superior region:

	1906.	1905.	1904.
Mesabi Range, tons.....	23,792,882	20,153,699	12,156,008
Gogebic Range .....	3,641,985	3,705,207	2,398,287
Menominee Range .....	5,109,088	4,495,451	3,074,848
Marquette Range .....	4,057,187	4,210,522	2,843,703
Vermillion Range .....	1,792,335	1,677,186	1,282,513
Miscellaneous .....	128,742	111,391	67,480
Total .....	38,522,239	34,353,456	21,822,839

The heaviest individual producer was the Mountain Iron mine in the Mesabi range, with an output of 2,536,249 tons in 1906. Ninety-seven mines are listed as active producers in the Mesabi range, 34 in the Gogebic, 50 in the Menominee, 35 in the Marquette and six in the Vermillion. Only two miscellaneous mines, both in Wisconsin, are listed. The total number of active mines thus appears as 224.

The British System of Cartage and Delivery of Freight at Terminals.\*

II.

HANDLING SMALL PARCELS BY PASSENGER TRAINS.

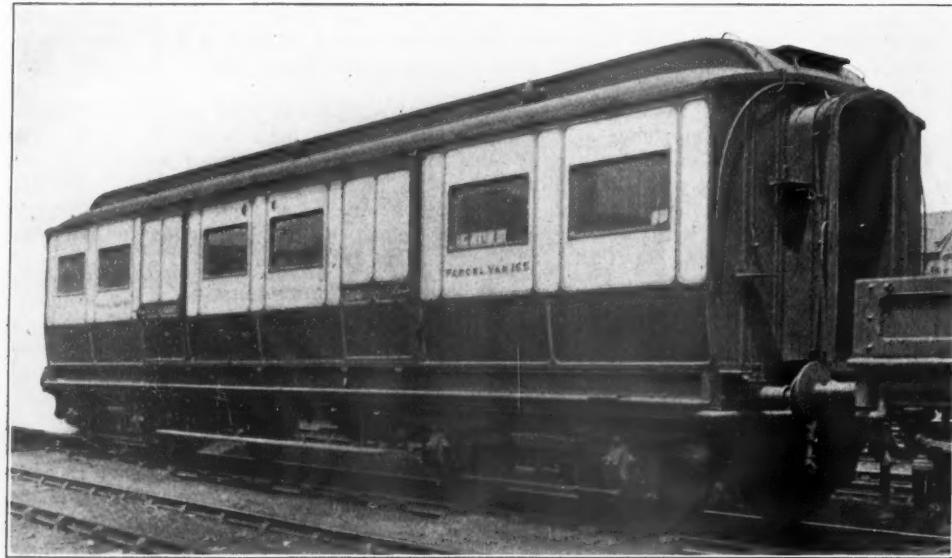
During the year ended December, 1905, according to the Board of Trade returns, the railroads of the United Kingdom accumulated, from purely traffic sources, as distinguished from hotels, rents and other "side shows," an income of \$510,940,062. Of this, \$41,131,152, or rather more than 8 per cent. of the whole, was derived from the carriage of merchandise, mails, etc., in passenger trains. It will be seen from this that the conveyance of parcels,

hand carts, and by hand. In many districts, again, where the company places its own horse and motor omnibuses at the service of its passengers, they act as parcel carriers as well. Free collection is undertaken, whether the request is received at a depot or receiving office or is intimated by the exhibition of a card, supplied for the purpose, in the sender's window. Many parcels are also tendered at the company's depots and receiving offices. The North-Western has 90 of these places in London alone, together with 34 other firms who are appointed auxiliaries and allowed a small commission by the company without any extra charge being made to the public. The public can also tender their parcels for conveyance over the North-Western to the vanmen, or at the offices of any other railroad company, which will accept them and hand them over to the North-Western at the nearest point, this arrangement being reciprocal.

Arrived at the depot, each parcel is weighed by the railroad staff, the charges are assessed, and the railroad stamps to the required value, similar to those of the postoffice, but larger, are affixed in all cases where the sender pays carriage, and where this has not already been done at the receiving office. When sender does not pay carriage, a "to pay" label, showing the amount to be collected on delivery, is attached. This system, which was adopted by the North-Western on May 1, 1898, for parcels conveyed solely over their own lines, is found to be a great saving in time and labor and a distinct advance on the old method which has, however, still to be pursued in the case of parcels destined for places on other roads. A record is kept at both ends of the parcels dealt with through each depot. The old method is to make out a waybill, giving details of each parcel, for the information of the guard or checker on the train, and to assist the staff at the receiving station in checking its safe arrival. It serves, too, as a record of the charges collected or collectible.

This document accompanies the parcel, a duplicate being retained at the forwarding station for accounts purposes and purposes of reference in case of miscarriage or damage.

After the stamps on the parcels going to stations on the North-Western have been canceled by an india rubber stamp bearing the name of the station and the date, all the parcels are loaded for despatch to their various destinations in the guards' (brake) vans of the passenger trains, or in the case of traffic for large



Parcel-Sorting Car.

passengers' baggage, newspapers, perishable foodstuffs, horses, dogs, and so forth by the passenger services plays a by no means insignificant part in the living earned by the roads. More important still is the fact that this substantial addition to their revenues is the reward for numerous invaluable services rendered to the British public, at whose disposal are thus placed advantages in the matter of quick collection, conveyance and delivery of small parcels unequaled by those of any other nation. The object of the present paper is to briefly set out the nature and the manner of operating some of these facilities.

The paper published in the *Railroad Gazette* on November 23d last, with reference to merchandise conveyed in freight trains, shows that the British roads go a great deal further than the provision of cars and haulage, and that usually their obligations are not fulfilled unless and until collection, loading, transport, unloading, delivery and sometimes warehousing have been performed. The same rule applies to at least an equal extent in the case of merchandise carried in passenger trains, while the speed and frequency of the services are, of course, superior to those for freight traffic, all the passenger trains, even to the "crack" expresses being utilized.

No better example than the London & North-Western Railway can be taken, the resources of this road having placed it in the position of being both the largest carrier of this class of traffic and the largest contractor for the Government mails. Exclusive of passengers and mails, the receipts from the company's passenger train traffic during the year 1906 amounted to \$5,693,257, or 7 1/4 per cent. of its total traffic income of \$73,155,281. This is represented by the charges on 14,800,000 parcels, as well as passengers' excess baggage, foodstuffs, newspapers, horses, dogs, carriages, etc. To such an extent has the parcels traffic of this road developed in recent years, that, in addition to making use of all its passenger trains in the 24 hours, it also runs regular trains, consisting entirely of parcels vans equipped to run at passenger speed. The 5,500 cartage vehicles provided chiefly for dealing with freight traffic, but which also freely assist the passenger department—which as freely reciprocates—in the work of collection and delivery, are augmented by 200 two-wheeled carts, 350 vans, and about 40 horse vehicles of other descriptions, which are employed in connection with the passenger train traffic. At the smaller country places deliveries and collections are made by means of carrier-tricycles,



Two-Wheel Van for Collection and Delivery.

centers, in cars specially built for speed and fitted to enable sorting to be performed en route. A good deal is done by the company in the way of placing parcels in hampers, both at forwarding depots and en route, especially in the case of parcels crossing the Channel to Ireland. The obvious advantages are preservation from damage and speedier handling, particularly at Holyhead, where the hampers are very quickly transferred from trains to steamers, and vice versa, by means of cranes.

On arrival at receiving station they are unloaded by the depot staff, and particulars of each parcel are entered on a sheet which is taken out by the vanman or other individual when delivering, for the signature of the consignee to be obtained. If the package has not been prepaid, the money is collected now, or the outstand-

\*A previous article appeared in the *Railroad Gazette*, Nov. 23, 1906.

ing amount debited to the consignee's account for collection periodically.

Parcels addressed "till called for" are warehoused for one day. If delivered on the second day following receipt, a charge of 2d. is made, if on the third day or any of the six following days, 4d. Beyond the ninth day an additional charge of 2d. per week or fraction of a week is imposed.

It may have occurred to the reader that the fact of being large carriers of mails for the Government has not precluded the North-Western from, at the same time, competing with the Post-office Parcels Post scheme. And, indeed, from the senders' point of view, the company's arrangements are preferable, because the Government will neither collect parcels, except in large quantities, nor accept them at the postoffices without prepayment. Again, the Government will neither collect parcels, except in large quantities, have not. Competition with the postoffice is, however, limited to packets up to 11 lbs. in weight, beyond which the railroads have a monopoly of the business, with the exception of that small portion of it retained by highway carriers. The general scale of rates for conveyance and collection and delivery within the usual limits is as follows:

Lbs.	Parcels for stations in England, Wales and Ireland—				Parcels for stations in Scotland—			
	Not exceeding 30 miles.	Above 30 and not exceeding 50 miles.	Above 50 and not exceeding 100 miles.	Above 100 miles.	Not exceeding 30 miles.	Above 30 and not exceeding 50 miles.	Above 50 and not exceeding 100 miles.	Above 100 and not exceeding 200 miles.
1	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4
2	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4
3	0 0 5	0 0 5	0 0 5	0 0 5	0 0 5	0 0 5	0 0 5	0 0 5
4	0 0 6	0 0 6	0 0 6	0 0 6	0 0 6	0 0 6	0 0 6	0 0 6
5	0 0 6	0 0 6	0 0 7	0 0 7	0 0 6	0 0 7	0 0 7	0 0 7
6	0 0 6	0 0 6	0 0 8	0 0 8	0 0 6	0 0 8	0 0 8	0 0 8
7	0 0 6	0 0 8	0 0 9	0 0 9	0 0 6	0 0 9	0 0 9	0 0 9
8	0 0 6	0 0 8	0 0 10	0 0 10	0 0 6	0 0 8	0 0 10	0 0 10
9	0 0 6	0 0 8	0 0 11	0 0 11	0 0 6	0 0 8	0 0 11	0 0 11
10	0 0 6	0 0 8	0 0 10	0 0 10	0 0 6	0 0 8	0 0 10	0 0 10
11	0 0 6	0 0 8	0 0 10	0 0 10	0 0 6	0 0 8	0 0 10	0 0 10
12	0 0 6	0 0 8	0 0 10	0 0 10	0 0 6	0 0 8	0 0 10	0 0 10
13	0 0 6	0 0 9	0 0 11	0 0 12	0 0 6	0 0 9	0 0 11	0 0 12
14	0 0 6	0 0 9	0 0 11	0 0 13	0 0 6	0 0 9	0 0 11	0 0 13
15	0 0 6	0 0 9	0 0 12	0 0 14	0 0 6	0 0 9	0 0 12	0 0 14
16	0 0 6	0 0 10	0 0 12	0 0 15	0 0 6	0 0 10	0 0 12	0 0 18
17	0 0 6	0 0 10	0 0 13	0 0 16	0 0 6	0 0 10	0 0 13	0 0 19
18	0 0 6	0 0 10	0 0 13	0 0 17	0 0 6	0 0 10	0 0 13	0 0 21
19	0 0 6	0 0 11	0 0 14	0 0 18	0 0 6	0 0 11	0 0 14	0 0 19
20	0 0 6	0 0 11	0 0 14	0 0 19	0 0 6	0 0 11	0 0 14	0 0 20
21	0 0 6	0 0 11	0 0 15	0 0 19	0 0 6	0 0 11	0 0 15	0 0 21
22	0 0 6	0 0 10	0 0 15	0 0 11	0 0 6	0 0 10	0 0 15	0 0 20
23	0 0 6	0 0 10	0 0 16	0 0 20	0 0 6	0 0 10	0 0 16	0 0 20
24	0 0 6	0 0 10	0 0 16	0 0 20	0 0 6	0 0 10	0 0 16	0 0 20
Above 24, per lb....	0 0 1/4	0 0 1/2	0 0 3/4	0 0 1	0 0 1/4	0 0 1/2	0 0 3/4	0 0 1

Insurance covering the entire journey is undertaken on payment of small premiums, varying according to the value and nature of the package. Insured parcels are signed for from hand to hand throughout, lockups being provided for them at the depots and in the cars.

At the above rates the company is ordinarily liable without insurance for the full value of the packages in the event of loss in transit; but in the case of gold, silver, banknotes, deeds, silk,

train parcels, which are carried up to any weight. As the weight increases, however, the charges get proportionately heavier, until, except in cases where the more expensive means of transit is justified by the necessity for very prompt delivery, it becomes prohibitive. When this happens the sender has recourse to the freight train services; but, as the minimum weight charged for a package transported by freight train is 28 lbs., light packages go more cheaply, as well as more expeditiously, by passenger trains. In either case they are, whenever required, collected from the sender's and delivered to the receiver's premises by, or on behalf of, the railroad company without extra charge. And it is not the public alone that benefits by the cartage arrangements being in the company's own hands. As nearly as circumstances permit, the teams work to time tables and the work is done with far greater regularity than would otherwise be the case. The flow of traffic through the depots is rendered more uniform, so that the moments of idleness and undue bustle on the part of the operating staff are



Van for Parcel Collection and Delivery.

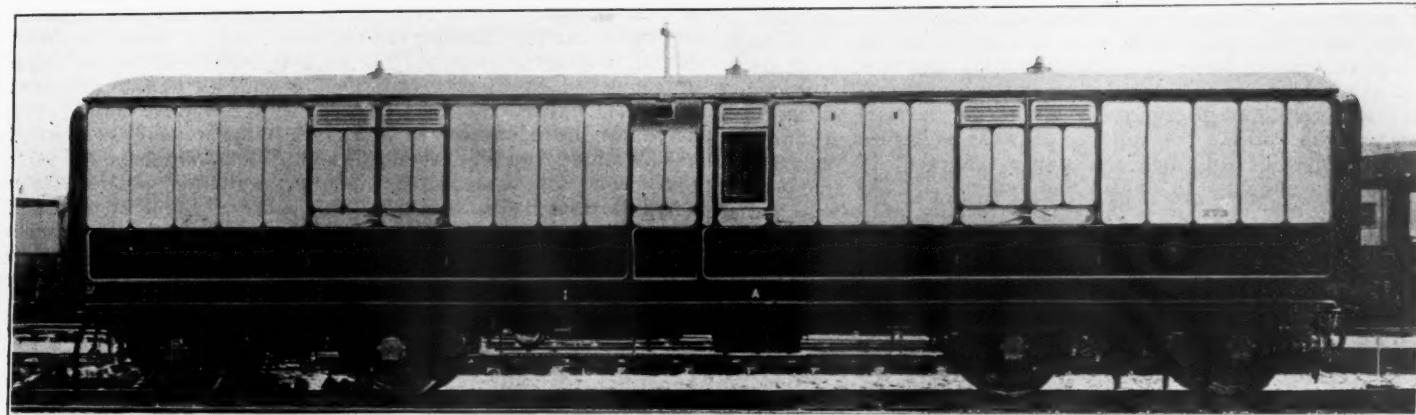
minimized at the despatching point, while deliveries can be made with equal uniformity, thus avoiding congestion at the receiving end.

When it is realized that, in addition to the parcels post, the millions of other single parcels by passenger trains, and those by highway carriers, who still have their uses, vast quantities are also collected by the numerous packed parcel carriers, bulked by them, and transported over the railroads in freight trains at the cheaper rates, some idea will be gained of the extent to which the tendency to small shipments has grown in the United Kingdom. The facilities reviewed here perhaps afford some indication of a few contributory factors in this remarkable development.

#### Reciprocal Demurrage.

Mr. Milton H. Smith, President of the Louisville & Nashville, contributes the following lucid statement of the demurrage principle and the reasons why reciprocal demurrage is unfair, in the form of a statement before a committee of the Alabama Legislature:

The regulations proposed by the bill\* are sometimes termed



Typical Brake Van, with Accommodation for Parcels and Baggage on Either Side of Guard's Compartment.

lace, china, glass and other exceptionally fragile or valuable articles, their responsibility, unless a declaration of greater value is made at the time of tendering, and insurance effected accordingly, is limited to £10 by an act of Parliament, known as the "Carriers Act" of 1830. Cheaper rates (about one-half the above scale) are available, if the owner is willing to assume the risk, for agricultural, farm and dairy produce and other special classes of traffic as distinct from general parcels.

These rates are all specially designed to cover the passenger

reciprocal demurrage, the meaning of which seems to be that because a carrier is permitted to charge a consignee, or owner of property, storage on property which the consignee does not receive and remove with reasonable promptness, a shipper is entitled to exact a penalty when a carrier is unable, or for any reason fails, to furnish, with reasonable promptness, transportation for property

\*An act to require railroad companies and any person, firm or corporation engaging in the business of a common carrier or any commodity, freight or material of any kind, to furnish cars; and to provide a penalty for failing or refusing to do so.

which the owner may desire to ship. Due consideration will show that the conditions and obligations are unlike, and that the term "reciprocal demurrage" erroneously designates two entirely distinct obligations. I think all the states have enacted statutes which provide that the obligations of a common carrier cease after the property has reached destination and is ready for delivery to the consignee, and that thereafter the responsibility of the carrier is limited to that of a warehouseman, that after a reasonable time the carrier may store the property in an ordinary freight warehouse and make a reasonable charge therefor, and, if deemed prudent, insure the property sufficient to secure the carrier against loss of freight and other legal charges, or may place the property on storage with a public warehouseman, said warehouseman being responsible for the safeguarding of the property and responsible to the carrier for the accumulated freight or charges. The statutes also provide that after the expiration of a certain period the property may be sold and the proceeds applied to the payment of the freight and charges of the carrier and warehouseman, the excess received belonging to the owner of the property, or in case the owner is unknown, or does not claim the amount, in some of the states the surplus goes to the state, and, I think, in some cases, is credited to the school fund.

There is no difficulty in applying the statutes to miscellaneous merchandise, or property handled through warehouses, or in less than car-load quantities. There are some classes of property, however, shipped in car-load quantities, which under the contract between the owner and the carrier is to be unloaded by the consignee, that it is impracticable for the carrier to unload and store in its warehouse, or to place on storage in a public warehouse when the consignee fails to promptly unload. This applies especially to bulky articles of low value, such as coal and lumber. At points where there are elevators, or grain storage warehouses, the carrier may store the grain. To some extent, this may be, and is, done with bulky articles like hay.

It is evident that if a carrier has the right to charge storage on merchandise left in its warehouse, or to place such property in a public warehouse, it has the right to make a reasonable charge for storing the car-load property left in its cars which the consignee is under contract to unload.

From these conditions, the carriers adopted the rule of making a small charge, seldom more than one dollar per day for each car not unloaded within a reasonable time, usually 48 hours, after the same had arrived at destination, and was placed at a point where the consignee could unload the same. In practice, however, this charge was not uniformly enforced. During periods when the facilities of the rail carriers were in excess of requirements, they could, and oftentimes did, permit consignees to store property in cars for indefinite periods. Under such conditions, the strife between the carriers was often acute, and shippers availed of the circumstances to secure unreasonable concessions, or permission to store the property in cars indefinitely. The result was that in many cases brokers, or commission men, would order large quantities of property shipped, taking the chances of selling the same. If they failed to do so promptly, they secured valuable concessions in the way of free storage. Under these circumstances, when the demand for transportation increased, the carriers were oftentimes greatly embarrassed by their inability to secure the prompt unloading of cars, and endeavored to obtain relief by reinstating the storage charge. Unregulated competition rendered the practice irregular, and, some years ago, what are called car service associations were formed, to prevent discrimination and insure the treatment of all alike, or enforce like regulations upon all. A common agent was employed to represent all of the carriers in specified districts, who collects the storage, or what is termed demurrage.

The object of collecting the storage charge is to induce the owner of the property to unload and remove it. The amount collected in no way reimburses the carrier for the loss of the use of the equipment, and this is especially true at the present time when the demands for transportation are largely in excess of the facilities.

The cost of maintaining the bureaus and collecting the storage or demurrage charge absorbs a large part, and in some cases all of, or more than the amount collected.

Notwithstanding the owners of property are, as a whole, interested in having cars promptly unloaded, so that they may be utilized to the advantage of all concerned, yet, many consignees selfishly resist the payment of the so-called demurrage, or if they pay, do so unwillingly. I believe that in every instance where the payment has been resisted in the courts, the result of the contention has been in favor of the carriers.

Notwithstanding the interests of the shipper and consignee seem to be identical, they do not always co-operate to promote the interests of both. As an illustration, a manufacturer of lumber ships a car to a customer, possibly a commission merchant, which is not unloaded, and for that reason the manufacturer is unable to secure additional cars and is oftentimes greatly embarrassed and suffers a heavy loss. This in no way seems to concern the party

at fault, although he may be directly affected by the failure of the millman to secure cars in which to make additional shipments. In cases where the shipper and consignee are the same, as in the case of a shipment of ore, limestone, coal or coke to a furnace, the carrier is in a position to enforce the prompt unloading because, if the owner fails to promptly unload, he does not secure cars in which to load additional material, which brings operations to a standstill, and he will, therefore, arrange to promptly unload the cars.

As an illustration of the difficulties under which the carrier labors, take the conditions that have existed for several months past at Mobile, which is a large export shipping port, especially of lumber. Lumber sold for export to be reshipped at a somewhat indefinite date, depending upon the arrival of a vessel, the consignee, to avoid the expense of unloading and storing, desires to keep the property on cars until the vessel arrives. The accumulation during the month of July and August, 1906, was very great. This was aggravated by the storm in September, 1906, and the conditions became desperate. The facilities of the Louisville & Nashville Company were so overtaxed that it became almost impossible to place cars to be unloaded for consignees who were prepared to promptly unload, and, in fact, materially interfered with the movement of through freight traffic—threatened paralysis or stoppage. At the same time, the manufacturers of lumber were in great distress because of the inability of the company to furnish cars for other shipments, not only to Mobile, but to all other points.

A statement was prepared showing the numbers of the loaded cars on hand at 7 o'clock a.m., December 15, 1906, and the length of time they had been on hand. It was found that of the total of 193 cars of lumber, 52 had been on hand prior to December 1, 1906, some of which were received in October, or had been on hand 52 days. Of all classes of property, there were 524 car-loads that had been held from three to 60 days. On December 29, 1906, another check was made of loaded cars that were on hand on December 15, 1906, which showed that 33 of such cars were still on hand undelivered. To relieve the situation, the management was compelled to adopt arbitrary measures—temporarily stop the shipment of some classes of property to Mobile, and, in some cases, to unload and store oil cake and lumber. During all this time, many shippers were in distress because of the inability of the company to furnish cars to be loaded. This is especially applicable to manufacturers of lumber.

The conditions that have prevailed at Mobile are typical of those over the entire Louisville & Nashville system. The business of many consignees has outgrown their facilities for promptly receiving and handling all of the property the increased business requires, and thus renders it difficult for them to promptly relieve the cars.

The reasonableness of making a just and lawful charge for the storage of property in cars which the consignee fails to promptly unload is so manifestly in the interest, not only of the carrier, but of its patrons, that it is conceded—is not denied.

Let us now consider the relations between common carriers and shippers. It is the duty of a common carrier to transport property to the extent of its facilities, for all who may desire to have property transported, upon equal terms. It must provide facilities for receiving, caring for and forwarding property to destination. When, by the terms of the transportation contract, the shipper is to load the property, cars must be furnished to enable him to do so; but a carrier can only be equitably, and, I think, lawfully required to provide facilities for normal traffic—cannot be required or compelled to furnish facilities beyond its ability or capacity. A carrier having equipped himself with a vehicle moved by one horse for the movement of a limited traffic, cannot be required to handle traffic requiring a vehicle moved by four horses. A railroad constructed and equipped for handling a limited local traffic, with a single track, adverse grades and curves, cannot be required to furnish two, four or more tracks, or the facilities furnished by railroads in some parts of the country operating four, and sometimes eight tracks, over grades where a single locomotive may move 3,000 tons against the inferior single-track road 300 tons.

The traffic conditions prevailing in the territory served by the Louisville & Nashville and affiliated roads have for some time been abnormal. Notwithstanding the strenuous efforts that have been made by the management, and the very large expenditures incurred and large additions to equipment, construction of additional side-tracks, second tracks, efforts to reduce grades, and in many ways increase its facilities, the traffic is, at present, largely in excess of such facilities.

As indicative of the efforts made, will say that the expenditures during the 13 years ending June, 1906, for equipment, were \$14,367,852, and the total expenditures during the same period for equipment, additions to property, betterments, etc., were \$74,723,320.

During the four years ending June, 1906, the number of locomotives was increased from 605 to 745, or 23 per cent.; and in tractive power from 13,872,700 to 18,477,700 lbs., or 33½ per cent.

During the six months ending December 31, 1906, the number

of locomotives was increased from 745 to 818, or nearly 10 per cent., and in tractive power was increased from 18,477,700 to 20,972,800 lbs., or 13 per cent.

During the four years ending June, 1906, the number of freight cars was increased from 27,699 to 36,158, or 31 per cent., and the capacity 41 per cent.

During the six months ending December 31, 1906, the number of freight cars was increased by 1,548, equal to .043 per cent., and the capacity increased .052 per cent.

Contracts have been made, and construction authorized, for 71 locomotives to be placed in service during the current calendar year at an estimated cost of \$976,058, and the construction of 4,075 freight cars and 25 passenger car equipment during the same period, at an estimated cost of \$3,082,150, or a total of \$4,058,208.

Take the South & North Alabama Railroad as an illustration. It is a road originally constructed with limited capital, through a rugged country, across drainage, and when opened for traffic there was not a community of 100 persons on the line between Montgomery and Decatur. The alignment is crooked and the grades excessive, equivalent to more than 80 ft. to the mile. The heaviest locomotive in use, having a tractive power of 35,000 lbs., can move but 740 train tons.

A double-track has been constructed from Black Creek to Oxmoor, a distance of 14.6 miles; from Decatur to Flint, 5.4 miles; from Calera to Hardy, 12.6 miles, and numerous passing tracks have been created. In addition, large expenditures have been made to provide increased terminal facilities at Decatur, Birmingham (Boyles), Montgomery, etc. Nevertheless, the traffic now pressing is greater than can be moved, and if the present volume of traffic is to be continued and increase, it will be necessary to reconstruct the line, reducing grades and curvature, creating second tracks, increase the equipment, and construct shops and other facilities. The cost will be very great. The work of reducing grades and constructing second track between Oxmoor, Ala., and Hardy, Ala., 14.41 miles, has been entered upon, at an estimated cost of \$1,010,500. I roughly estimate that to reduce grades and curvature, and construct second track over the entire line, Montgomery to Decatur, with the necessary increase in equipment, shops and terminal facilities, will cost not less than 15 millions of dollars, and, under existing conditions, the work could not be completed in less than five years. Under the existing financial conditions, the money cannot be provided, and after the expenditure of the money already provided, and the work undertaken is completed, the remainder of the work cannot be entered upon unless there is a favorable change in financial conditions. At the present time, neither the South & North Alabama Railroad Company, nor the Louisville & Nashville Railroad Company can obtain the capital necessary to prosecute the work. It, therefore, follows that in this case, the carrier must restrict its traffic to existing facilities—must refuse to undertake to move traffic in excess of its facilities.

It is known of all that the railroads were organized to transport persons and property, and that that being the object of their creation, the managements are eager to secure all of the traffic they can possibly handle, and they solicit and importune shippers, and do all they can to create and promote traffic. Circumstances have seemingly conspired to overdo the business. Traffic, at least for the time being, is in excess of the capacity of the carriers. The South & North Alabama Railroad cannot now move all of the property offered it. Under these circumstances, can the state of Alabama equitably and lawfully enforce penalties for failure to accomplish the impossible? A penalty of two, or a thousand dollars per day for failure to furnish cars upon the demand of shippers will not in any way add to the facilities. On the contrary, it may render it impossible for the company to increase such facilities. Keep in mind the distinction that when a carrier, having performed its duty and is responsible only for property as a warehouseman, makes a reasonable charge for caring for the property as a warehouseman, it is only doing what it is legally entitled to do, and what it should do from a business standpoint, while the bill under consideration proposes to enforce a penalty because the conditions are such that it is unable to assume the contract obligations of a common carrier for certain specified property.

Will the existing abnormal conditions continue, and if so, for what period? In my opinion, they may continue for 12 or 18 months, after which I believe the existing facilities will be adequate to the transportation requirements. This opinion is based upon the fact that a large proportion of the existing traffic is the result of the enormous expenditures that have for a number of years past been made by the railroads of the country, in adding to their facilities. The expenditures already made, and those authorized and under way, amounting to many hundreds of millions of dollars, in addition to giving employment to many millions of people, have created, directly and indirectly, a very large traffic which the railroads have been moving. The action of the United States government and state legislatures, combined with personal damage claim lawyers and labor unions, in conspiring to take the control of the

property of the railroads from their owners—bind them hand and foot that they may be the more readily plucked—has caused, and will, I fear, continue to cause, investors to refrain from loaning the capital required to make further additions. If the railroad companies cannot obtain additional capital, it follows that as soon as the capital already provided has been expended—the improvements, additions, etc., now under way completed—the employment and traffic that has resulted from construction expenditures by the railroad companies will cease, and the existing facilities will, therefore, be equal to the requirements.

I hope I have made it clear that designating the bill under consideration "reciprocal demurrage" is a misnomer; that the making of a storage charge for caring for property as a warehouseman, after the duty as a common carrier has ceased, is one thing, and the proposition to penalize the carrier for inability to receive property for transportation, is another. The first is equitable and business-like—the other, an attempt to enforce punitive damages for a failure to accomplish the impossible.

#### Law Regulating Trainmen's and Operators' Hours of Labor.

The much amended hours of labor law, originally presented in the Senate a year ago, was finally passed on Monday of this week in form as follows (Senate bill No. 5133):

Be it enacted, etc., that the provisions of this act shall apply to any common carrier or carriers, their officers, agents, and employees, engaged in the transportation of passengers or property by railroad in the District of Columbia or any territory of the United States, or from one state or territory of the United States or the District of Columbia to any other state or territory of the United States or the District of Columbia, or from any place in the United States to an adjacent foreign country, or from any place in the United States through a foreign country to any other place in the United States. The term "railroad" as used in this act shall include all bridges and ferries used or operated in connection with any railroad, and also all the road in use by any common carrier operating a railroad, whether owned or operated under a contract, agreement, or lease; and the term "employees" as used in this act shall be held to mean persons actually engaged in or connected with the movement of any train.

Sec. 2. That it shall be unlawful for any common carrier, its officers or agents, subject to this act to require or permit any employee subject to this act to be or remain on duty for a longer period than sixteen consecutive hours, and whenever any such employee of such common carrier shall have been continuously on duty for sixteen hours he shall be relieved and not required or permitted again to go on duty until he has had at least ten consecutive hours off duty; and no such employee who has been on duty sixteen hours in the aggregate in any twenty-four-hour period shall be required or permitted to continue or again go on duty without having had at least eight consecutive hours off duty. Provided, that no train despatcher who [handles] orders affecting train movements shall be required to remain on duty for a longer period than eight hours in any twenty-four-hour period, and that no employee who transmits, receives or delivers orders pertaining to or affecting train movements shall be required or permitted to be or remain on duty for a longer period than twelve hours in the aggregate in any twenty-four-hour period except in case of emergency, when the employees named in this proviso may be permitted to be and remain on duty for four additional hours in a twenty-four-hour period on not exceeding three consecutive days in any week.\*

Sec. 3. That any such common carrier, or any officer or agent thereof, requiring or permitting any employee to go, be, or remain on duty in violation of the second section hereof, shall be liable to a penalty of not to exceed \$500 for each and every violation, to be recovered in a suit or suits to be brought by the United States district attorney in the district court of the United States having jurisdiction in the locality where such violation shall have been committed; and it shall be the duty of such district attorney to bring such suits upon satisfactory information being lodged with him; but no such suit shall be brought after the expiration of one year from the date of such violation; and it shall also be the duty of the Interstate Commerce Commission to lodge with the proper district attorneys information of any such violations as may come to its knowledge. In all prosecutions under this act the common carrier shall be deemed to have had knowledge of all acts of all its officers or agents, provided that the provisions of this act shall not apply in any case of casualty or unavoidable accident or the act of God, nor where the delay was the result of a cause not known to the carrier or its officers or agent in charge of such employee at the time said employee left a terminal, and which could not have been foreseen.

\*As we go to press we find that this paragraph is wrong. A nine-hour limit is put on all operators, including despatchers, in day and night offices, and a 13-hour limit in day offices.

Provided further, that the provisions of this act shall not apply to the crews of wrecking or relief trains.

Sec. 4. It shall be the duty of the Interstate Commerce Commission to execute and enforce the provisions of this act, and all powers granted to the Interstate Commerce Commission are hereby extended to it in the execution of this act.

Sec. 5. That this act shall take effect and be in force one year after its passage (March 4, 1908).

#### **Motor Driven Rotary Slotting Machine.**

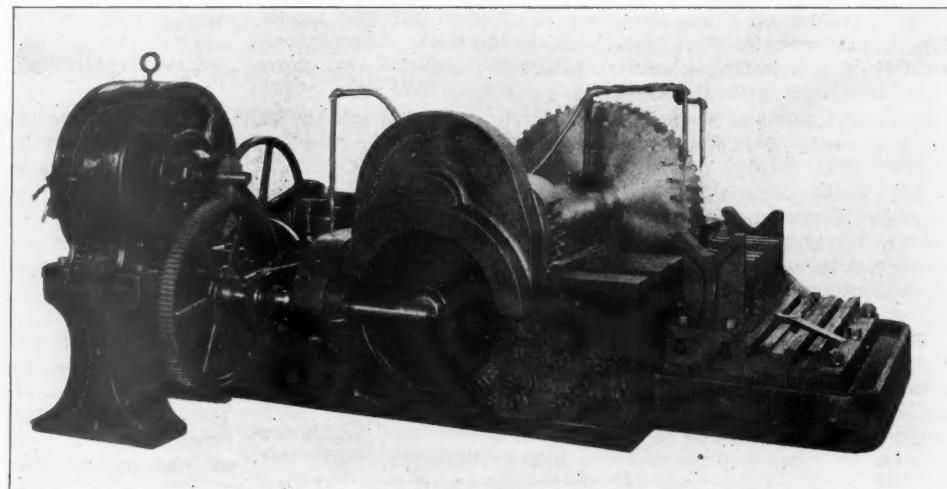
The accompanying illustration shows a double rotary slotting machine built for the Union Pacific by the High Duty Saw & Tool Co., Eddystone, Pa. The machine is to be used in slotting forged steel crank shafts, connecting rods and links. It can also be used as a general cut-off machine on axles and miscellaneous straight stock by the removal of one of the saw blades. Two "Tindel" high duty high-speed steel inserted teeth milling saws are operated by the machine. Each milling blade is 36 in. in diameter and has 60 inserted cutters of high-speed steel.

The machine is electrically driven by a 15-h.p. Westinghouse direct-current motor geared 2 to 1. The motor is attached directly to the driving shaft of the machine, through the gear and spur pinion shown. Power feeds ranging from  $\frac{3}{8}$  in. to  $1\frac{1}{8}$  in. per minute can be obtained with both saws feeding simultaneously. No worm gearing is used in the drive; all driving power is transmitted to the saw blade through straight and bevel gearing. The enormous friction of worm gearing under heavy feeds is thus eliminated, and the frequent renewals of costly worm wheels obviated. The housing of the machine is massive and the saddle carrying the arbor has a large surface bearing on the table. It is fitted to it with an underlock cast solid. All wear on the saddle or table is taken up with phosphor bronze tapered shoes. A removable table with screw adjustment for setting work to the line is also furnished. On it are mounted special "V" stands and rest blocks with clamps and bolts designed especially for setting and firmly holding crank shaft work while being slotted. These fixtures are removable so as to leave the table underneath clear for bulky work, or for mounting other special fixtures for holding a variety of work. A liberal reservoir for a supply of drilling or other compound and an automatic pump with flexible piping maintain a liberal stream for cooling and lubricating each milling blade while the machine is in operation. Troughs cast around the bed of the machine collect and return the lubricating fluid to the reservoir and pump. The machine has capacity to cut double slots spaced up to 10 in. wide and 11 in. deep. On steel up to .45 carbon the machine cuts slots of these dimensions in 15 minutes when driven with moderate power.

#### **New Hoboken Terminal of the Lackawanna.**

The new ferry terminal and passenger station at Hoboken of the Delaware, Lackawanna & Western was opened to the public on February 25. It will be remembered that on the night of August 8, 1905, the Hoboken terminal and ferry houses of the road were burned to the ground. Before the last flame had flickered out plans were being drawn for a temporary terminal. In a few days the temporary arrangements were in place. The destruction of the old buildings, which were well insured, was not an unmixed misfortune to the road for a new terminal within two or three years was a necessity, and it was something of a problem to know how to dispose of the old buildings. The fire solved the problem.

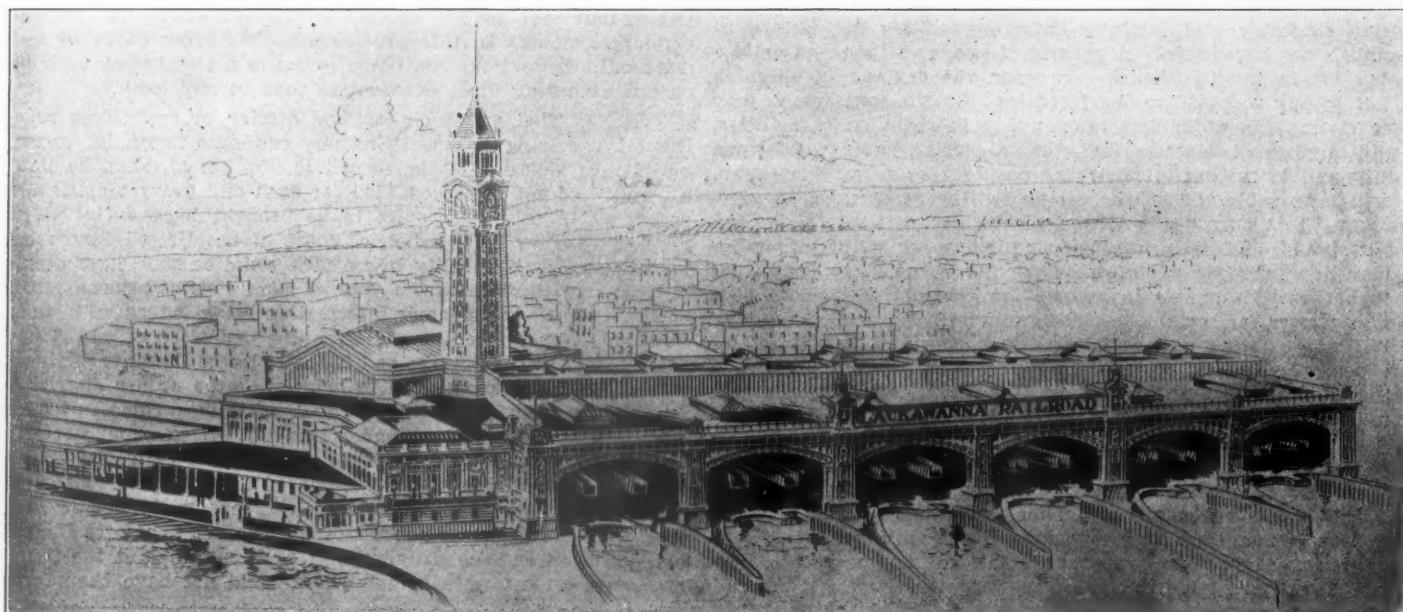
The first concrete construction on the new terminal was begun on March 25, 1906. Except for three of the ferry slips, the whole passenger station was finished on February 3, 1907. It was built over traffic with 100,000 people and 3,600 teams daily using the



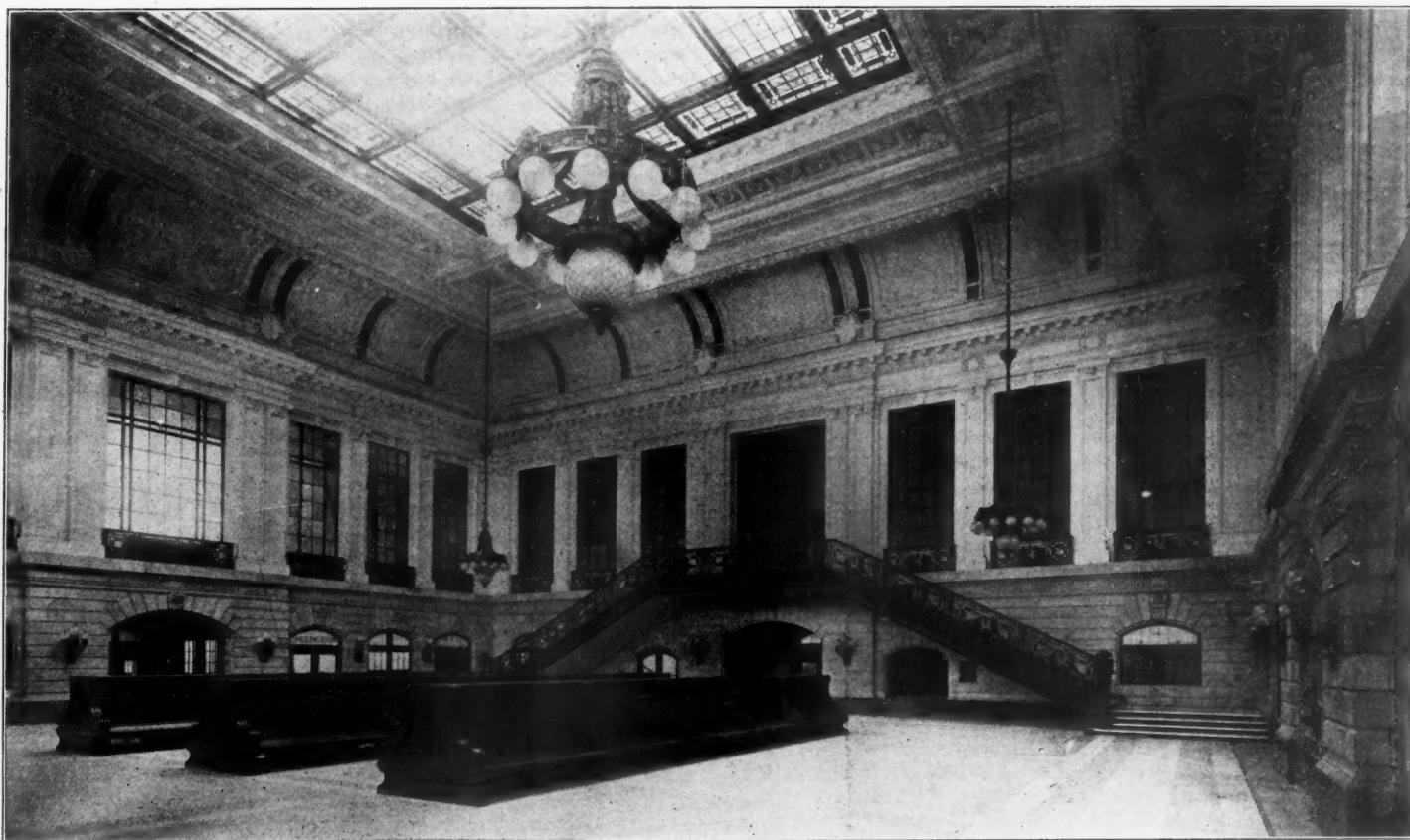
**High Duty Slotting Machine.**

temporary buildings. The buildings are built over the water on concrete and steel foundations which rest on piles. The terminal building is fireproof even to the racks and desks in the ticket office. The train shed, which was designed by Lincoln Bush, Chief Engineer of the road, is original and noteworthy. It is built of steel, concrete and glass. There is a smoke opening over each track. It was described in detail in the *Railroad Gazette* of September 1, 1905. The train shed covers 14 tracks and is 607 ft. long.

On the first floor of the building is the waiting room and its dependencies; also the ferry concourse. The waiting room, an interior view of which is shown, is 90 ft. x 100 ft. and 55 ft. high. It is finished in limestone and plaster with high windows on all sides and a leaded art glass ceiling light. At night this room will be lighted by 1,000 incandescent lights. In each corner hangs a bronze chandelier weighing a ton. There are also brackets of lights around the sides and canopies of lights over the seats. This room



**New Hoboken Terminal of the Delaware, Lackawanna & Western.**



Main Waiting Room; Lackawanna Terminal.



Restaurant; New Lackawanna Terminal at Hoboken.

and the baggage room are finished in Indiana limestone with copper work above. From the waiting room ornamental bronze stairways lead down to the ferry concourse. The decorations are in Louis XVI. style. Opening off from the waiting room are women's rooms, smoking rooms, information bureau, lunch room, telephone booths, baggage and express windows and news stand. On the second floor, which is reached by an easily inclined plane and by elevators, is the restaurant. A fully equipped emergency hospital, a barber shop and bath rooms and offices are also on this floor. The restaurant, a photograph of which is shown, is the most ornate room in the building. It is finished in old ivory with old gold hangings and French gilt fixtures. All the woodwork is mahogany. The seating capacity is over 250. The room overlooks the water, and an outdoor balcony, seating 45, will be used in summer.

The ferry approaches have been built with the special purpose in view of convenience. Three pairs of slips, each accommodating two large double-decked ferryboats, serving Twenty-third, Christopher and Barclay streets, New York, have been provided. To reach the ferryboat there is a concourse 70 ft. x 100 ft. with rows of coupled columns and heavy ornamental beams across the ceiling, to the upper deck. To reach the concourse passengers have the choice of three ways, an inclined plane, a stairway and elevators. The waiting rooms and ferry concourse have a joint capacity of 40,000 people.

The whole building is to be covered with copper. As shown by the architect's drawing, a tower 250 ft. high rises from the central facade. This tower contains a clock 12 ft. in diameter, the largest in New York harbor. At night the tower is illuminated from top to bottom with electric lights and the six ferry slips are spanned by arches supported by ornamental piers, all of which are outlined by electric lights. The terminal is to be heated and ventilated by the most modern appliances; in winter, warm fresh air will be forced into the various public rooms.

The street elevation of the ferry house will have, when finished, five bays surmounted by pediments. Of the 8,000 incandescent lights used, 2,100 are used in five large electric signs, one of which has letters 9 ft. high.

There is an immigrant station with a ferry slip and building of its own, accommodating 800. It is built with the special purpose of having it kept in an absolutely sanitary condition. It has special car tracks and a special ferry boat.

Kenneth M. Murchison is the architect of the Lackawanna terminal.

#### Railroad Decisions in February.

The following decisions were handed down by Federal and Supreme courts in February:

*Assumption of risk of injury by brakemen.*—A brakeman injured by striking a switch target while on the ladder at the side of a car will not be denied a recovery for injuries, on the ground that they were caused by an assumed risk, where it appears that the switch target was placed dangerously near the track shortly before his injuries were received and he had no knowledge of this fact and had not been warned about it. *Boston & Maine vs. Gokey*, 149 Fed. Rep. 42.

*Presumption of care by person killed at crossing.*—The legal presumption that a traveler killed at a crossing exercised due care for his safety, which is based on the instinct of self-preservation, obtains only where there were no witnesses to the accident. It cannot be invoked where the surrounding facts and circumstances conclusively show that he did not exercise this care. *Rich vs. Chicago, Milwaukee & St. Paul*, 140 Fed. Rep. 79.

*Duty of employees to observe defects in appliances.*—A railroad employee, working constantly with an engine in railroad yards may not close his eyes to obvious and dangerous conditions or defects in the engine and then sue and recover for injuries caused by these defects. *Williams vs. Choctaw, Oklahoma & Gulf*, 149 Fed. Rep. 104.

*Unblocked frogs.*—A court cannot say that the failure to block frogs is actionable negligence where the evidence does not show a uniform custom of railroads in the state to block frogs and does show that the frogs on the railroad in question were not all blocked and there was a fair difference of opinion among practical railroad men as to whether blocking really made the frogs safer. *Wabash vs. Kithcart*, 149 Fed. Rep. 108.

*Damage to property by operation of railroad.*—In Nebraska a property owner may recover from a railroad for special injury to his property by the operation of a railroad in its vicinity which is in excess of that sustained by the public at large, although no part of such property is actually invaded or appropriated. The recovery will include damage to the property from noise, smoke, cinders and vibrations of the ground and obstructions which interfere with or impair the owners use of public highways in the vicinity. The measure of damages is the difference between the market value of the property before the construction and operation of the road and its market value afterward. *Mason City & Fort Dodge vs. Wolf*, 148 Fed. Rep. 961.

*Employer's liability act.*—The act of June 11, 1906, governing the liability of carriers to their employees is not strictly a regulation of interstate commerce, but imposes new rules of liability in the master and servant relation, which, if valid, are binding on all courts, state and Federal, but which have no such relation to interstate commerce as to bring them within the constitutional power of Congress to regulate such commerce. The act is so framed that its provisions are applicable alike to all commerce, including that between citizens of the same state, and cannot be confined to that which is subject to congressional control. *Brooks vs. Southern Pacific Co.*, 148 Fed. Rep. 986; *Howard vs. Illinois Central*, 148 Fed. Rep. 997.

*Schedule of rates.*—A shipper claiming an illegal exaction of freight charges in violation of the interstate commerce act must show either that there has been some unreasonable or excessive charge imposed or some unlawful discrimination practised against him by which he has been pecuniarily damaged. He cannot recover on a merely technical construction of the law, because in addition to the ordinary scheduled rate an extra charge forcing service, also shown by the schedules, but separately, has been collected from him, and it does not appear that the charge was unreasonable. *Knudsen-Ferguson Fruit Co. vs. Michigan Central*, 148 Fed. Rep. 968.

*Expert witnesses.*—A witness having practical railroad experience and familiar with overhead structures and buffers may testify whether a buffer at the end of a spur track was reasonably safe and proper one, and as to whether reasonable and proper care had been exercised in so building an overhead structure as to prevent the use of the hand-brake on a freight car until within 100 ft. of the end of the spur track. *Gila Valley, Globe & Northern vs. Lyon*, 27 Sup. Ct. Rep. 145.

*Refusal to transport liquors.*—An express company doing business as a common carrier must serve the public impartially. Judge Goff holds that under this rule an express company has no right to refuse to receive and carry packages of liquors from lawful dealers therein in one state, while it receives and carries the same in other states, nor to refuse to carry the same C. O. D. and to collect and return the purchase money from the consignee in accordance with the general custom of the business, where it follows such custom with respect to other commodities, nor can it require a consignee of such liquors before delivery to furnish a certificate or affidavit that he is a *bona fide* purchaser of the same for his own personal use or has a state license to sell liquors. *Crescent Liquor Co. vs. Platt*, 148 Fed. Rep. 894.

*Rates in Mississippi.*—The Federal Constitution presents no obstacle to establishment by the Mississippi Railroad Commission of a flat rate of 3½ cents a 100 lbs. on grain and grain products carried from Vicksburg to Meridian over the Alabama & Vicksburg, where that company, under the guise of a "rebilling rate," gives any Vicksburg merchant receiving a carload of grain or grain products over the Vicksburg, Shreveport & Pacific a rate of 3½ cents a 100 lbs. on any grain he may ship to Meridian. *Alabama & Vicksburg vs. Railroad Commission*, 27 Sup. Ct. Rep. 163.

*Indictments under the Elkins Act.*—An indictment for violation of the Elkins act for giving or receiving rebates need not allege that the carrier's published rate was a reasonable rate nor set out its tariff in full. It is sufficient if it avers that a certain named rate was in force between designated points as shown by the published tariffs. Under this act the consignee is liable to indictment no less than the consignor by receiving concessions from the published tariffs of an interstate carrier. *United States vs. Standard Oil Co.*, 148 Fed. Rep. 719.

#### Foreign Railroad Notes.

On the railroad in German East Africa from Dar-es-Salam westward the track was laid for 70 miles from the coast Dec. 1.

The freight blockade in Hungary reached such proportions that the State Railroads gave notice that no freight would be received for shipment after Jan. 9 until previous accumulations should be cleared away, which would take "a few days."

The plans for the new great station in Leipsic covered nearly half a mile of the little river Parthe. To avoid building an archway of that length, it has been decided to move the river, which will reduce the length of the archway to about 1,050 ft.; but retaining walls for 2,800 ft. of the new channel must be built.

In Germany round-trip tickets, good for a return within 45 days, are issued at a large reduction in price. Children less than 10 years old pay half price. A case has come up in which a child made his outward journey when less than 10 years old, but reached his birthday before returning, though within the 45 days. The railroad refused to accept the return part of the ticket as fare; suit was brought, and the courts decided that the ticket was good for the return journey. As there will be no more round-trip tickets at reduced rates after April next the decision has little practical importance.

**Handling Immigrant Traffic at the Port of New York.**

The enormous flood of foreign immigration during the past decade has created the necessity for most complete and careful methods, not only that the country itself may get the best results from the new blood, but that the foreigners may not be subjected to the many abuses which formerly existed. In the correction of these evils the railroads of the country have had a large part. The opening of new territory through railroad expansion has encouraged the movement of immigration from the coast into the interior. The railroads have perfected a system whereby the immigrant may reach these sections with least possible delay, safeguarded from the depredations of those who would make him their prey. In co-operation with the Department of Commerce and Labor, which has

to by this bureau, which not only looks out for the correct ticketing of the immigrants to destination—a difficult problem owing to the various nationalities represented, and their ignorance of conditions in this country—but divides the competitive traffic on an agreed basis between the different lines.

It is estimated that nearly 80 per cent. of the immigrants who land at the port of New York are destined for some point on the railroads of the United States and Canada, only 20 per cent. going to New York City and its suburbs for permanent residence. About 60 per cent. of the immigrants handled at Ellis Island are destined to some point west and south of New York City and about 20 per cent. to points east. Of the 60 per cent. going west, 35 per cent. go to the various commercial and agricultural centers east of Chicago and the Mississippi river; the rest, to the great wheat



**Main Building and Barges; Ellis Island.**

charge of immigration, the railroads have created what might be termed an auxiliary government department into whose care the immigrant passes when his fitness for American residence has been certified to by government officials.

As nearly 75 per cent. of the immigrants to the United States enter the port of New York—over 1,000,000 in 1906—whence they scatter to every part of the country, the chief office of the Immigrant Clearing House, as this railroad bureau is called, is at Ellis Island, the government headquarters for reception and examination of immigrants at New York. Auxiliary offices are located at the other ports of entry, but most of the business passes through the New York office. The entire immigrant traffic after being examined by the government authorities under supervision of Robert Watchorn, Immigrant Commissioner of the port of New York, is turned over by the government to the Immigrant Clearing House, which represents all of the initial lines, rail or water, moving traffic from New York. The ticketing and checking of baggage is attended

and corn growing states of the northwest and southwest and to the Pacific coast for employment in its vineyards.

Before formation of the Immigrant Clearing House the immigrant was the legitimate prey of agents of every line leading out of New York. Many of these agents were irresponsible, and the helpless foreigner, unable to speak English and unused to American methods, in consequence suffered not only actual money loss in being forced to pay higher fares than he should have done but loss in time through circuitous routing. In those days, Castle Garden, then the government headquarters, was a scene of babel worse confounded. In the midst of the rushing, jostling horde of railroad agents and interpreters, the poor immigrant was like a rabbit harried by a pack of hungry hounds.

To-day all is changed. The immigrant, if he wishes, may arrange with the steamship agent in Europe for his whole trip to destination, including steamship and railroad accommodations. Transportation is furnished in the form of a prepaid order on the



**Branch Post Office and Money Exchange; Immigrant Clearing House.**

Immigrant Clearing House which is accepted at the New York office and exchanged for the proper railroad tickets, collections being made from the steamship agents through the regular channels. This greatly simplifies the ticketing of immigrants. Large numbers of immigrants, however, buy their railroad transportation after reaching New York. It is to this class of business that the new arrangement particularly appeals, and it was primarily for their protection that the bureau was established.

The progress step by step of an immigrant in entering the country is interesting to follow and shows how closely his interests are looked after, not only by the government, but by the officials of the steamship lines and railroads on which he travels. Having obtained the proper steamship transportation, he embarks for America. While on the ship he is under the care of the ship's officers. His interests are safeguarded from corrupt influences and his health looked out for. The immigrant remains subject to the ship's rules until he is delivered to the United States officials at the dock, although the government first observes him when the quarantine inspection is made. If he is found free from disease, the regular quarantine clearance certificate is given him before the ship lands.

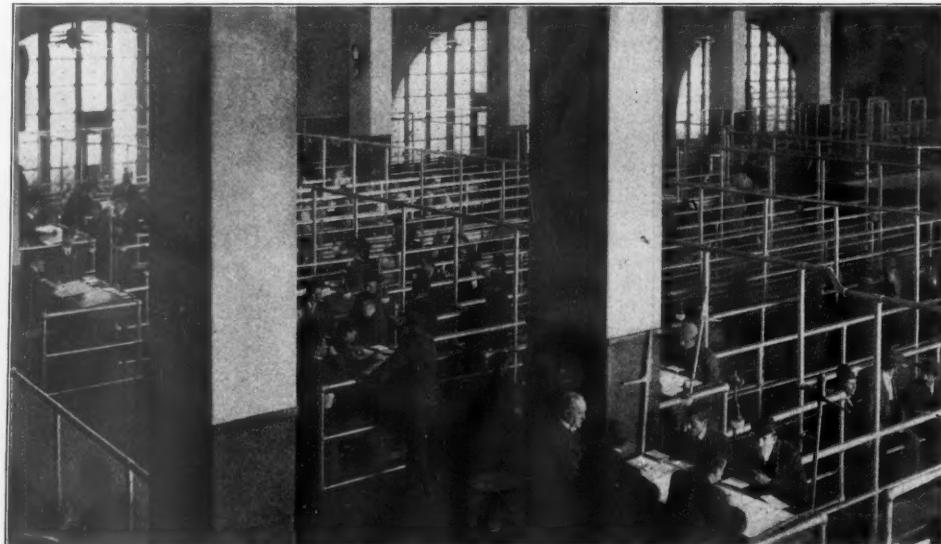
At the dock the immigrant first comes under the care of the Immigrant Clearing House. He is met by a representative who, of necessity, is an expert linguist. Baggage is examined by the customs officers. If it is found free of dutiable articles it is taken in charge by the Clearing House people, who give the immigrant a check for its safe delivery at Ellis Island. If the baggage is held by the customs, it is also sent under a special form of check to Ellis Island, where there is a branch customs office. Here it is re-examined and the necessary charges adjusted. All baggage arranged for, the immigrant, with his thousands of fellow travelers, is transported by special barge or steamer under care of government officers to Ellis Island. His baggage is taken on the same boat to be delivered to the Clearing House baggage room at the island.

Handling of the immigrant traffic before it is turned over to the railroads is a most complicated problem, necessitating not only great care, but also all possible despatch owing to the very large numbers. Great improvements have been made from time to time in the government facilities at Ellis Island, especially during the term of the present Commissioner, who has been notably successful in relieving the hardships which must necessarily result from the immigrant's gross ignorance of American conditions.

At Ellis Island the immigrant is unloaded from the barges

registry room. At the further end he is turned to his right between two railings and faces in succession three doctors, each of whom examines for certain physical defects, which may be sufficient to bar him from entering the country. If any trace of disease is detected his coat is marked with certain cabalistic chalk marks and he is turned to an enclosure on the left for further examination. Special waiting rooms, divided by high iron railings and gratings, are provided for this purpose.

If, on the other hand, he passes the examination satisfactorily, he is passed along to another official, who directs his steps into



The Final Government Inspection at Ellis Island.

one of 20 railed enclosures, each of which has bench room for 30 immigrants. These are called the free pens and are shown in one of the photographs. Here the immigrant waits his turn for examination by an inspector who sits at a high desk at the end of the pen. Questions about name, age, residence, destination, education and funds—this last to guard against accepting persons likely to become a public charge—are asked, and if the answers are satisfactory and agree with the information given in the steamship company's waybill, the immigrant, who is waybilled to this country like a piece of freight, passes the inspector holding in his hand his waybill, a card bearing a distinctive number and color.

At the west end of the registry room are four ways of exit, to which the colored cards are an index. One leads to detention rooms where are sent those who have not satisfactorily passed this last inspection. Here the immigrant's case receives the attention of another set of officials. On the floor above the registry room are



The Ticket Counter of the Trunk Line Association at Ellis Island.

and passes into the main door of the large building shown in the photograph. To the immigrant this is the most important part of his progress into the new country. Entering the central door of this main building, he passes directly into the heart of the government's domain. Up a wide stairway he goes, the first sight meeting his view being a large American flag which hangs over the top of the stairs. Under it he meets an official who examines his quarantine certificate. If this is correct, he is passed along between two high walls of iron grating to the eastern end of the large

dormitories, one for men and one for women and children, where these special cases are housed until they are attended to. In summer time the roof gardens on this floor are popular. Here families gather during the day; at night they are separated.

Another exit leads down a flight of stairs in the center of the building. To this are guided those who go to New York City. At the foot of the stairs is a waiting room to which friends and relatives come to welcome the new comer. From this point on he is free to take the ferryboat which runs hourly to New York.

If the immigrant is destined to a point east of New York City, his card will bear the proper color and he will be guided to another flight of stairs to the right of the one leading to the New York ferry. Here he will be met by a representative of the New England lines, who will arrange for his railroad ticket and baggage, collecting the checks given by the Clearing House and arranging for the transfer of passenger and baggage to the stations of the New England lines in New York. The immigrants bound for nearby points in New York state and for New England points are carried by the government ferry to the Battery. Those for nearby points on the Hudson, Harlem and Putnam divisions of the New York Central, as well as the New England contingent which goes out mostly over the New York, New Haven & Hartford, also go to the Battery by ferry and from there under escort by subway, elevated or surface cars to the Grand Central Station.

The immigrant going to a point west, north or south of New York passes to the left of the New York exit. Down another flight of stairs he goes and into the room of the Immigrant Clearing House of the Trunk Line Association. This room looks like the ticket office of any large railroad company. Facing the immigrant as he enters is a long ticket counter with office rooms at each end. On his left is a branch post office, and the desks of the money exchange, which does a land-office business on a big day exchanging all kinds of foreign coin into American currency. The immigrant makes this exchange at better than market rates. A little further on are the quarters of the representative of the Western Passenger Association, which attends to all business

of the checks but the forms and numbers of his tickets. With this receipt he goes into the general baggage room of the Clearing House to which his baggage has been taken from the steamer. He identifies his baggage and if the check it bears corresponds to the check numbers on the memorandum he holds, the baggage is weighed. Each immigrant is allowed 150 pounds of baggage on a whole ticket and 75 pounds on a half ticket. If the gross weight of the baggage exceeds the limit of all the tickets he holds he pays the excess charges. He then receives a check for all his baggage through to destination, the baggage being placed in one corner of the room, in piles, according to the road over which it goes. At the scales a memorandum is taken of the kind of baggage, the number of pieces, the gross weight and the number and kind of tickets held. This information is included on the way-bill to the railroad over which the baggage goes, the immigrant receiving a regular duplicate check such as given to any passenger holding baggage. The baggage being checked through to destination, the immigrant is relieved of the necessity of attending to any transfers and is not subject to the many extortions which used to be the practice by irresponsible express companies and local agents.

The record of the railroad baggage department at Ellis Island is remarkable. Immigrants' baggage is the most miscellaneous imaginable. Crockery, furniture and pianos are not unusual impedimenta. Names and addresses are written in foreign languages, and often most illegibly, yet in 15 years only one piece of baggage has been lost during its handling at Ellis Island. The



Immigrants Leaving Ellis Island for the Railroad Stations.

west of Chicago and St. Louis. On the right, stretching along the sides of the room, are the booking offices of the coastwise steamship companies, who handle immigrant business; the office of the Canadian Pacific and of the Western Union and Postal Telegraph Companies.

Representatives of the various transportation companies meet the immigrant as he enters the door of the main room. This is not to solicit business, but simply to see whether he is bound. If he has a prepaid steamship order for transportation, he is directed at once to the proper ticket window to obtain his tickets. If he is a cash customer, unless he has American money, he is directed to get his money changed.

The ticket office of the Trunk Line Association, as is shown in the illustration, is a long counter which stretches across one whole side of the room. Here ticket sellers of long experience in handling foreigners and able to understand almost any dialect or decipher almost any address, however illegible, sell him a through ticket at second-class rates to any point in the country, which he can buy with absolute assurance that no advantage is being taken of his ignorance and inexperience.

Having purchased his tickets, the steps of the immigrant are turned toward the general waiting room. At the exit door he is asked for the baggage checks which have been given him at the steamship dock. It has been found that in many cases the immigrant either lost or mislaid these small checks. A different system has recently been adopted. The checks are collected by an official of the Clearing House at the exit door, and the immigrant is given a receipt for them, bearing not only the numbers

ticketing and baggage arrangements are all under the direction of T. J. Faulkner, agent of the Immigrant Clearing House.

The immigrant now passes to the waiting room at the eastern end of the building to wait for the barge which will take him up the river to his station. This room is divided by high wire screens into a number of sections, each for the immigrants destined to one station. Thus those for the Pennsylvania and Lehigh Valley go to one compartment; those for the Reading-Jersey Central and Baltimore & Ohio routes to another; for the West Shore and New York, Ontario & Western into another; for the Erie to another, and the Lackawanna passengers to another.

A restaurant keeper has a concession for lunch stands in this room, which are well patronized. There are on sale at a low price packages of food sufficient for a several days' trip, each with the price and description in several languages plainly marked on it. Here again the immigrant is protected from unscrupulous dealings. This is the only feature of the service at Ellis Island which is not directly under the control either of the Government or the railroads.

In all its features the handling of immigrants at Ellis Island is a remarkable example of fast and efficient work. On days of heavy arrivals over 5,000 immigrants have been examined by the government inspectors and handled by the Immigrant Clearing House.

Late in the afternoon the barges are loaded. The number used depends on the number of immigrants to be transported. If the number is large, a barge is loaded for each of the five stations; if small, only one is used. The boats are held until

the passengers and baggage have all been loaded before proceeding up the river.

Each railroad on the New Jersey side of the Hudson has a special waiting room or passenger station for immigrants. This is necessary, for all immigrants destined for points any great distance from New York are handled on special trains, usually in the evening. These waiting rooms are plain but comfortable. Refreshments may be obtained here of the attendants. In these waiting rooms, as well as at Ellis Island, the greatest care is used to keep the immigrants from outside interference. They are kept in the waiting rooms or the enclosures surrounding them until there are people enough for a whole train, and then carefully guarded to the trains. When the immigrant starts on his journey every safeguard is thrown around his person and belongings, and every precaution taken to insure his safe and prompt arrival. The special trains are run through to western destinations without change of cars, often as second sections of regular passenger trains. On these trains special care is taken by the crew to see that each person leaves the train at the station to which he is ticketed.

The immigrant travels in cars in which none but this class of business is allowed to travel, if he is going any distance. Not only the trunk lines, but western connections, adhere to this rule, thus maintaining an oversight without which these people would be easy prey for unprincipled sharpers. Immigrants have not intelligence enough to be treated like ordinary passengers, but while they may at times apparently be ordered about roughly—and this seems the only way to manage them—their welfare is looked out for from the beginning until the end of their trip. At least one of the roads sends out in charge of each immigrant train an interpreter, whose duty it is to look out for the immigrants while *en route*, thus insuring safety from interference and contributing in every way to the comfort of the immigrants.

Thus from the time the immigrant enters the port of New York until he reaches his final railroad destination he is not only watched over with great care and given favorable prices in purchase of his necessities, but is carefully protected from contact with unauthorized persons, so that even in cases where he is utterly ignorant and inexperienced and has a considerable sum of money in his possession, he can reach his destination safely.

The following table is of interest as showing the number of arrivals at New York last year and the tremendous growth of immigration during the last 10 years:

Total Immigration to the Port of New York.			
	Cabin.	Steerage.	Total.
1897.....	90,932	192,004	282,936
1898.....	80,586	219,651	300,237
1899.....	107,415	303,762	411,177
1900.....	137,852	403,491	541,343
1901.....	128,143	438,868	567,011
1902.....	139,848	574,276	714,124
1903.....	161,438	643,358	804,796
1904.....	162,389	572,198	735,187
1905.....	184,932	776,330	961,262
1906.....	218,720	940,831	1,159,551

#### New York State Drawbridge Rules.

The New York State Board of Railroad Commissioners, adopting as its own the recommendations of J. D. Schultz, its inspector, concerning drawbridges, sends to the railroads of the state (those on which there are drawbridges) Mr. Schultz's report, and calls on them to advise if they will comply. The substance of the report follows.

There are in this state 41 openings in the main track roadway of steam railroads for passage of boats. At most of such openings there are swing bridges; a few are lift bridges, and there is one—in the Rutland Railroad, where the Addison branch crosses Lake Champlain—where a float draw is used. There are 10 openings on the Long Island; 16 on the New York Central & Hudson River; four on the Delaware & Hudson; three on the Delaware, Lackawanna & Western; two on the New York, New Haven & Hartford; two on the Staten Island Rapid Transit; one on the Rutland; one on the New York, Ontario & Western; one on the Buffalo Creek, and one on the Buffalo, Rochester & Pittsburg.

In making my regular inspection of railroads during the past summer I examined carefully 37 of those bridges, and have since receiving your instruction made thorough inspection of all.

The method of operating, protecting draw, connecting shore and bridge rails, etc., differs greatly on different roads, and in many instances on the same roads. I find none where the conditions, as operated, can be considered dangerous, and at only a few, where the protection is especially good, do the trains run at speed when crossing the draws; at all others the trains are required to come to a full stop before crossing or run with train under perfect control.

The method of securing the movable rails, that are necessarily unspiked for much of their length, at the ends of most drawbridges, the manner of signaling the approach to the draws, and the interlocking of the signals with the mechanism operating the draws can in nearly all cases be improved. I also consider that there should

be derailing switches in all tracks approaching the draws, located a sufficient distance from the end of the bridge that a train derailed thereby would not be likely to run far enough, on the ties, to get into the draw opening; guide rails can be secured to the ties that will prevent a train so derailed getting away from the track.

I respectfully recommend the following method of securing movable rails on drawbridges and signaling and protecting operation of trains crossing them: The movable rails on ends of all drawbridges to extend 2 ft. or more beyond the end of the bridge, and together with the shore rails, to have a miter joint; rails cut at an angle of approximately 30 deg.; points to be trailing for double-track bridges and to be trailing for wheels approaching the draw on single-track bridges; the mitered rails to meet in a "trough" or channel not less than 3 ft. in length, that will insure the rails being held in correct alinement; the movable rails to be bolt locked in position and the bolt lock to be interlocked with the signals governing the approach to the draw; the movable rails to be not less than 17 ft. in length and for at least 12 ft. of their length on the bridge to rest when in place on plates that shall have an angle or raised plate on the outer side that will prevent the rails being moved outward. This plate may be in sections, with space of one tie distance between the sections. Those plates to be firmly secured to the bridge ties and the rails to be connected to each other by at least four tie-bars.

The draw must be protected by home and distant signals and also by derails, the derails to be located, wherever practicable, not less than 500 ft. from the end of the draw, the home signals about 50 ft. farther away, and the distant signals not less than 1,500 ft. beyond the home signals, and all interlocked with the mechanism of the draw in such manner that the first movement toward opening the draw sets the distant signal to the danger position next the home signal to the danger position, then opens the derail; then the bolt lock securing the movable rails may be withdrawn, the rails raised, draw unlocked, wedges withdrawn and draw opened. The locking to be in such manner that when the draw is again closed, the wedges inserted and draw locked, movable rails lowered to place and bolt locked down, then derails can be closed, home signal cleared and the distant signal cleared, and that the above described movements can only be done consecutively and in the order named. In cases where the draw lifts, the rails on the end of the bridge can be securely spiked to the ties and will raise and lower with the bridge, but the method of connecting them at the ends of the draw will be the same, as will be the method of operating the bridge, bridge lock, rail lock, derails and signals.

If it is desired to use square end instead of mitered rails, with all the rest of the protection as above described, the only difference will be that the open joint will not ride quite so pleasantly, but will be practically as safe, and I see no serious objection to that form of joint being used. In some cases where the block signal system is in use and block towers are near the drawbridges, the draws are interlocked with the towers in such manner that the bridge tenders cannot make any movement towards opening the draws until unlocked by the signal tender. This is a good plan and should be followed wherever it can be done consistently.

#### New York State Block Signal Recommendations.

The New York State Board of Railroad Commissioners has issued to the steam railroads of the state the following circular:

We desire to call your attention to the necessity for the operation of trains on all steam roads under some form of block system that will prevent more than one train being in a block at the same time and that will serve to prevent the frequency of collisions. This can be done either by the manual controlled system, the automatic electrical block system or the telegraphic block system. If, owing to the volume of traffic, the telegraphic stations as they are now located are too far apart to properly handle the business by the telegraphic block system, intermediate blocks should be established. In the automatic electrical block system the blocks can be established of any desired length. The same is true of the manual controlled system.

The method now used on very many roads of spacing trains, or the permissive block system which allows more than one train in a block at a time, under cautionary orders, is not shown to be effective. A heavy train may make slow progress; a lighter one, even if held five or ten minutes at a telegraphic station, may overtake the leading train and collide with it. Also in the permissive block system a train enters the block and the men are too apt to consider that they are protected and do not flag promptly. Also another train entering the block under cautionary orders is too liable to assume that the first train must be out of the way by that time and does not proceed as cautiously as it should, and collisions result. We are aware that at terminal stations and large yards it will in some cases be necessary to permit more than one train at a time in such blocks; but those blocks should be made as short as they can consistently be made and the restrictions governing movements in them be made promptly and rigidly enforced.

We are of the opinion that permissive blocks should not be oper-

ated, and we recommend that all steam roads where the permissive block system is in operation install sufficient additional block signals at the earliest possible moment. You are requested to notify this board as to compliance with the recommendations.

**William A. Garrett.**

The new President of the Seaboard Air Line, William A. Garrett, has before him a problem which can, perhaps, be solved only by radical changes in operating and traffic department methods. It calls for just that genius for organization with which Mr. Garrett is credited. The Seaboard's earnings have not been up to the average of other southern roads with which it may fairly be compared; the increases in operating expenses seem greater than conditions justify, and even gross earnings have been falling off.

Mr. Garrett is a rigid disciplinarian. He brings out the best there is in his subordinates and directs their efforts along lines of maximum efficiency. He is quick to notice and encourage those who show initiative and do not hesitate to take responsibility. In the operation of passenger trains he insists on strict adherence to rules and, particularly, keeping to schedule time. The late train, he holds, always adds to the unavoidable risks of accident.

Mr. Garrett is 45 years old. He began railroad work as a messenger boy in a ticket office of the Ohio & Mississippi, now part of the Baltimore & Ohio Southwestern. Then he worked his way up in different departments in the St. Louis Union Depot until he was made Assistant Superintendent. From 1893 to 1896 he was Superintendent of the Terminal Railroad Association of St. Louis and at the same time Terminal Superintendent of the Wabash; for the last two years of this period he was also Superintendent of the St. Louis Merchants' Bridge Terminal. He was then appointed Superintendent of the Western division of the Wabash, and after a year was transferred to the Middle division. In 1899 he went to the Philadelphia & Reading as Superintendent of the Philadelphia division, being made Superintendent of the New York division in 1900. While in this position he was continually out on the line in his observation locomotive, and during the year beginning in 1902, when he was General Superintendent, he almost lived in the car. His work on the Reading showed his ability as a reorganizer in straightening out and building up the operating department. In 1903 he went to the Queen & Crescent Route as General Manager of the Cincinnati, New Orleans & Texas Pacific and the Alabama Great Southern, where he remained until, last November, he was elected First Vice-President of the Seaboard Air Line.

**Some Railroad Problems.\***

In the early days of railroads the chief problem was that of construction and equipment; later, when more railroads had been built than there was traffic to feed, there came the traffic problem, and all the abuses which followed in its train. These, in turn, led to the legislative problem accompanied by the Interstate Commerce Law of 1887, and through the nineties all sorts of problems—including bankruptcy for many. Now, within the past few years has come the great problem of enlargement—the construction period again, but in a different shape. Not experimental, for we had learned how to build and how to equip; not the building so much into new country, but to take care of the traffic which was overflowing our rails.

Events of the past year have proved the absolute necessity for almost all the large railroads in this country to enlarge their

trackage, their terminals, and their equipment; and yet, here again, when in considering where to obtain the necessary funds for such purpose—which must, of course, come from the public—the railroad managers find themselves confronted with great difficulties. This, of course, is largely due to the tremendous demands for capital, in the development that is going on in all parts of the world, but it is increased, at the moment, by the natural timidity of capital to invest its funds in railroad securities, in view of the violent attacks that are being made against corporations through Congress and the state legislatures.

This brings us, then, to our greatest and most perplexing problem—that of how to restore a state of reciprocal understanding and fairness between the carriers and the public. Many railroad officials believe that so deep-seated is the apparent hostility of the people that the management of the railroads will be taken practically out of the hands of their owners, and that great disasters are to follow. I do not share this view, principally for the reason that whatever may have been the faults in the past, the methods and practices of railroad management are now based upon a decent regard for their public responsibilities. Sooner or later the people

will recognize this—as I believe they are already beginning to do. But by no means can we minimize the actual situation of to-day. It is, indeed, a time of great anxiety to all those entrusted with railroad management, and who have the interests of their country at heart as well.

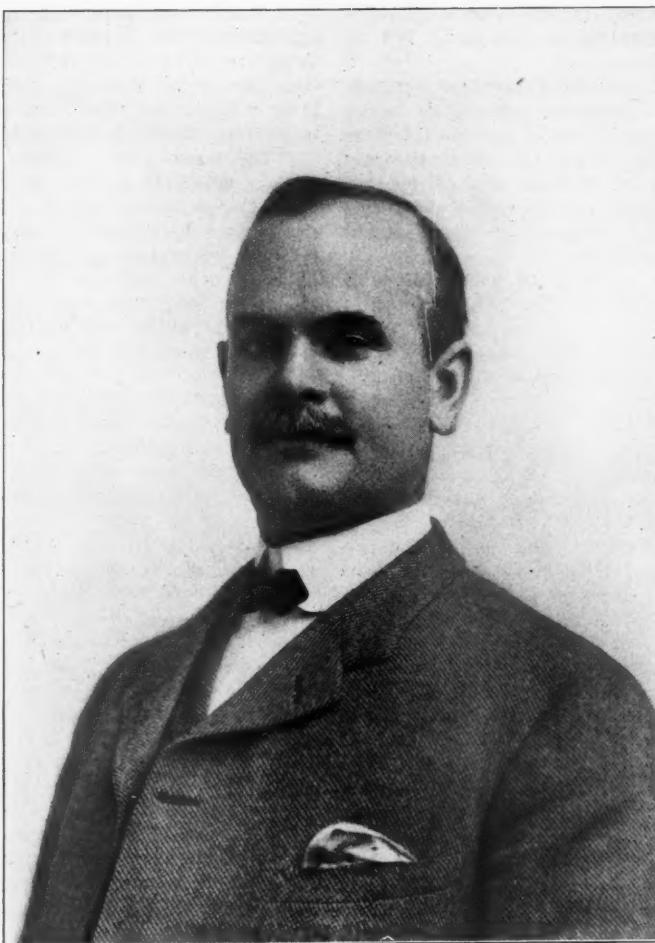
With the old rebates and secret discriminations things of the past, with all kinds of business in a most prosperous condition, we all know that within the past three years, suddenly, out of an almost cloudless sky, there has burst forth upon the railroads of this country a torrent of the most bitter and violent attacks—by political orators upon the stump; in magazines and newspapers; in Congress and state legislatures. It is fair to say, I think, that this onslaught had its origin in the agitation of 1904 for changes in the Interstate Commerce law. It was based upon a misunderstanding of existing railroad conditions and the position of the railroad in regard to the points at issue, which I shall presently explain.

Following the agitation surrounding the passage of the rate bill has come a swarm of bills in Congress and state legislatures, which, if they become laws, and are enforced, will prove disastrous to the railroads, and, equally so, to the public at large. The question is, What is to be done to prevent it? The old method of influence has been abandoned, and, I hope, forever. Has it left us unequipped to meet

the issue? To answer this question let us get a perspective.

We must not imagine, to begin with, that we are entirely blameless. We are in some respects only realizing the wages of past sins. We have done many of "those things which we ought not to have done," and we have left undone many of "those things which we ought to have done." Most of the evils date back many years and many of them might have been prevented had the government done its duty and enforced the law. Yet even in most recent years we can find some mistakes with which to concern ourselves. It is not strange that many men who have suffered loss through delays in their traffic, or in their personal transportation, or who saw themselves deprived of profitable business because they could not secure cars, should have become exasperated and, not having time to properly analyze the difficulty, thought that the railroads were lacking in foresight and management.

But let us go back a few years. It is a great mistake to hold the railroads responsible for such practices as rebating in those days, when it would have been impossible to throw a stone in a commercial community without hitting somebody who was taking rebates and wanting more. Many men are to-day running for office on anti-railroad platforms who if you were to say "Rebates" would duck their heads very much as David Harum said his Newport friends would do if he called out "Low bridge!" That rebates



William A. Garrett.

\*From an address of Vice-President Thayer of the Pennsylvania before the Traffic Club of New York, Feb. 16.

were wrong nobody questions, but to pillory a man to-day for accepting rebates at that time is a farce.

Many persons believe that the so-called discriminations, resulting in the secret arrangements, were largely influenced by the desire upon the part of railroad officials to favor one man against another, but no thoughtful man who has at all studied the problem believes this. Rebates and other forms of discrimination—whatever may have been the result in specific instances—had their origin mainly in the competition between carriers for the traffic. Incidentally, in transacting railroad business through secret arrangements, as became the custom in that period, there were many cases of discrimination in favor of the strong and against the weak.

There was a strong feeling upon the part of many men, both in and out of railroad service, that the larger shipper, under the ordinary rules of business, was entitled to a lower rate, and they could not conceive the real principle which should govern the making of railroad rates—which, however, has come clearly to be realized since that time. The railroad systems, generally, were not more anxious to pay rebates than they were to pay higher prices for their supplies, and simply pursued the course of their competitors because, otherwise, they saw nothing but loss and probable bankruptcy staring them in the face. The railroads were forbidden by law to meet and make formal agreements for the maintenance of rates, and by another law were required to compete. We all thought that the old plan *was* competition.

Had the government, through its Interstate Commerce Commission, vigorously undertaken to enforce the law—passing if necessary, long before it did, the Elkins Act—I think we should have seen a correction of these abuses long before the reform came; but, as a matter of fact, neither the government authorities nor many of those managing the railroads had yet reached a clear conception of the significance of the abuses which existed and of the proper legal method of uprooting those evils.

Upon the resumption of business activity, in 1898 and 1899, and, later, following the passage of the Elkins Act, the opportunity was presented—and in general accepted by the railroads—to get away from the old methods. While since then there have been some cases of violation of the law, in the matter of secret arrangements, yet I think that, at least within the last four or five years, it is safe to say that they have been of small importance, and perhaps in many of the cases—while a technical violation of the law—were actually not discriminations. I say this advisedly, so far as the eastern situation is concerned, because I know that the Pennsylvania Railroad Company has not paid a rebate for years, and it is fair to believe that as that company held its traffic—in fact, largely increased it—without the necessity for such arrangements, its competitors must have to a large extent pursued the same policy.

But not alone in reference to freight rates was there more or less complicity in evil between the people and the railroads, but let me ask you to consider, for a moment, the question of free transportation, or passes—whether political or business. It is only within the last year or two that the public conscience has been awakened on this subject. It is true, the railroads have been abused for several years by those who did not enjoy such favors, but is the railroad more responsible for the conditions that existed than the government of the people, either in the National Congress or in the state legislatures, and how could it be expected that the legislators in one state could feel that they were doing very wrong in accepting passes, when the legislators of another state enjoyed them by law of the state? How could members of Congress be criticized for accepting such privileges, or the railroads for extending them, when the Presidents of the United States and members of their cabinets, and other important officers of the government, not only accepted them, but practically exacted them, and, further, expected that private cars and private trains should be furnished without charge. Upon one occasion within the past two years I called upon the Interstate Commerce Commission to ask its assistance in eliminating the pass abuse, and was very frankly told that it could make no move, nor take any interest in the subject, in view of the fact that important public officials, including Senators and the members of Congress, felt that it was not improper for them to accept them. Out of this situation grew a large part of the pass abuse, because, following the national government and the legislatures, the large men of business felt that they could properly accept similar privileges.

The danger does not lie in the provisions of the new national law. There is no substantial difference between its provisions and those of the old law, except in respect to the powers of the Commission. There was no necessity for the new law, so far as the prevention of the old abuse of secret rates and discrimination was concerned. The operation of this law does not involve any material change in traffic operations of the railroads; the only danger is as to how the Commission may exercise its power in influencing reductions in rates, but even in that respect the railroads have the right of appeal to the courts. It is from various other bills being presented in Congress in which the immediate danger lies, showing possible interference by the national government with the operation

of railroads, with respect to the hours of labor of its employees, systems of signals, and other methods of operation, which should properly be left to the railroads themselves. This threatened interference of the federal government is having a powerful and dangerous influence upon the legislatures of the various states, who apparently are—in a slang term—"Seeing Congress and going them five or six better"—in the bills for reduction of state rates, both passenger and freight; for increase in taxation, and all sorts of measures which tend to reduce the earnings and increase the expenses, and hamper and delay the actual development necessary.

It was unfortunate that in the agitation and discussion following the President's recommendations, until the present law was finally adopted, there was a total misunderstanding upon the part of the public at large as to this attitude of the railroads. It was most unfortunate in that campaign that the principal point of contest upon the part of the railroads was lost sight of—and that is—the objection upon their part not to reasonable amendments to the law, and not—if the people wanted it—to some increase of power to the Commission, but to the attempt to make a commission of five or seven men—in many respects a political body—the final arbiters as to the rates and fares of the railroads.

Yet even with the new law on the statute books, our traffic problems are still with us. We are forbidden by law to make formal agreements as to rates, yet it is universally recognized that in order to secure an equitable adjustment of rates, it is absolutely necessary that the traffic managers of the railroads shall confer frequently. It is well known that such conferences are held and must be held to prevent discriminations, yet no definite agreements can be made.

The present law stipulates that there shall be no discrimination by railroads against persons or communities. Right here, however, the railroads are face to face with a problem all their own, which is a very serious one, and that is: How shall a particular railroad prevent discrimination against a community on its own line by some other railroad seeking to specially favor a community on its line? Is it not absolutely essential that there should be both an understanding and a virtual agreement on the part of the two railroads concerned for the purpose of protecting both communities?

Cases of dispute between railroads as to proper rate adjustments have, indeed, been referred to Interstate Commerce Commissioners as arbitrators and their findings have been observed. This shows how absolutely vital to all business is the necessity for that co-operation which can only be secured by agreement and conference between all interested parties. The President of the United States recognized the necessity for this fact in his last annual message and recommended that some legislation be passed which would permit agreements between railroads as to rates.

We are thus in the presence of this ridiculous situation; that on the one hand we are being threatened with prosecution by the government for violation of the Sherman Act in respect to methods which on the other hand the President of the United States and the Interstate Commerce Commissioners agree must be followed in order to properly discharge our responsibility to the public.

So much for the moment, for our national problem. As to state regulation: while not believing—now that we have a national law—that it is necessary or desirable for the public to establish state commissions and special railroad laws, at the same time, if the people desire such commissions, we have no right to look upon such a demand as "anarchistic," but we feel that the working of such commissions will be unsatisfactory to the business interests.

To avoid these dangers a regime of confidence and fairness on the part of the public toward the railroads must be restored, and to accomplish this we must place our case, as it were, before the legislators and the people and make clear our difficulties and the complications which beset us. Few, after all, understand the railroad problem, and we have not made it plain to the people, either because it was the fashion not to do so, or because we could not realize that things simple to us were not understood by the public. We must not stop at one statement, but discourse upon and elucidate every subject which the public misunderstands.

Let us be frank and take the public into our confidence as fully as is consistent with the proper conduct of our business. Let us approach the subject with the feeling that the railroads are not absolutely perfect, that we have to some extent brought this condition of affairs upon ourselves, and that we should govern ourselves in the future accordingly. Let us undertake to go frankly before the people and present the actual facts in connection with our affairs.

Let me illustrate: The Pennsylvania Legislature is in session. Numerous bills have been presented, of a most radical nature. It is our purpose to appear before every committee that will hear us, and tell our side of the story. I doubt very much if the average legislator—and certainly not the average citizen—understands whom he is injuring in unjust acts towards the railroads. Take our company, for example: It is not a small group of rich capitalists; it is not Mr. McCrea and myself and a few others; the Pennsylvania Railroad is owned by more than 40,000 people, 30 per cent. of whom live in Pennsylvania. Forty-seven per cent. of our shareholders are

women; and in many cases the dividend is their only source of income. Then there are thousands of bondholders; beyond them are nearly 100,000 employees in the state of Pennsylvania dependent upon the prosperity of the Pennsylvania Railroad for their livelihood.

Therefore, by the usual computation, it is safe to say that approximately half a million people—men, women and children—are actually dependent upon the welfare of this company in the state of Pennsylvania alone.

Upon the Pennsylvania Railroad's prosperity depends the prosperity of the other lines in its system, and including the employees of these lines there are 200,000 men, who, with their families, constitute an army of a million or more. Behind them, again, are the thousands of men, with their families, who produce the coal and other materials which the railroads use. Anything that cripples the railroads injures every one of these people.

When we make these and other facts plain, I cannot but feel that no injustice will be done. In the meantime, let us keep our minds well balanced, and not allow ourselves to believe that chaos is coming; let us meet the issue fairly and squarely and frankly. While, therefore, necessary for the present, at least, to suspend many improvements, let us keep our courage, trusting to the ultimate good sense of the lawmakers and the people for that sympathy and support to which we feel that we are entitled.

#### Cars for the Electric Lines of the Erie.

One of the cars to be used by the Erie on the electrified section of the Rochester division from Rochester to Mt. Morris is shown in the accompanying illustration. Four cars of this type were built by the St. Louis Car Co., which also built one combination passenger

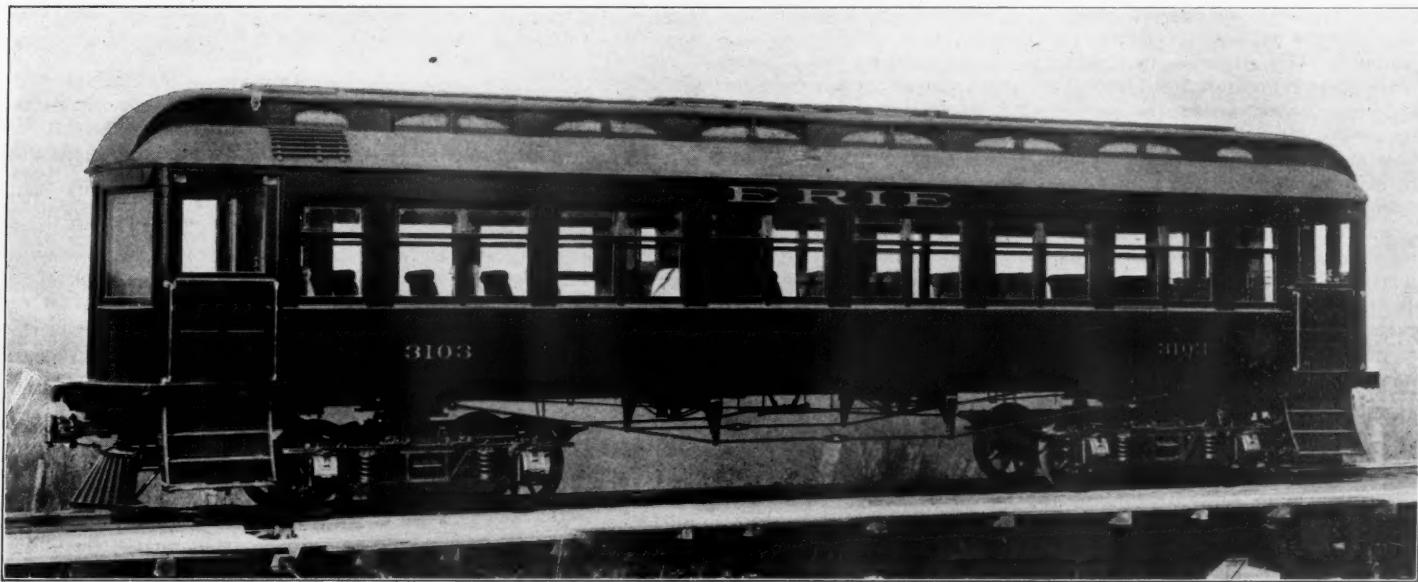
resolution approved June 30, 1906." The resolution of June 30 is that under which the Commission made the investigation reported in the *Railroad Gazette* last week. The present appropriation was asked for with special reference to the question of testing automatic stops.

#### Passenger Rate Regulation and the Canadian Parliament.

BY S. J. MCLEAN.

The current agitation in the United States in favor of statutory reduction of passenger rates has to some extent found its counterpart in Canada. While there has for some time been sporadic interest in the establishing of a two cent maximum passenger rate, it is only within the last four years that the question has been actively discussed in the Canadian Parliament. The revision of rates in Manitoba, consequent upon the agreement of that province with the Canadian Northern, has led to complaints in the adjoining Province of Saskatchewan that the passenger rates are too high. Recently the matter has been discussed in Parliament in connection with the railroad from Regina to Prince Albert, which was acquired recently by the Canadian Northern.

So far as there is more general discussion of the advisability of direct legislative regulation of passenger rates it is attributable to the persistent advocacy of one man, Mr. W. F. Maclean, who represents one of the Ontario constituencies in the Dominion Parliament. While his campaign, in which he has been materially aided by the newspaper which he conducts, has been energetic, it at the same time shows lack of adequate attention to some of the important matters involved. The latter fact is illustrated in the proposition he made in Parliament at the end of 1906 to permit ticket scalping. He claimed that a railroad ticket should be like a bank note and readily transferable from hand to hand. That it ought to



Electric Motor Car for the Electrified Line of the Erie Between Rochester and Mt. Morris.

and baggage car. They are 54 ft. long and seat 56 persons. The electrical equipment consists of four 100-h.p. Westinghouse a.c. motors, which will propel the cars at a maximum speed of between 45 and 50 miles an hour. In order to provide for trail car operation the cars are equipped with Westinghouse electro-pneumatic multiple unit control and air-brakes. They have M. C. B. passenger type couplers and buffers. A form of pantograph trolley will be used.

#### Close of Congress.

The 59th Congress adjourned on Monday, March 4. The bill limiting hours of labor, amended so as to include despatchers and telegraph operators, was passed by a vote which was substantially unanimous. It will be found in this issue. The reporters say that members of Congress received in one day thousands of telegrams from telegraph operators asking that the bill be passed.

The bill giving the Government additional rights of appeal in criminal prosecutions was passed last week.

In the "sundry civil" appropriation bill as passed there is a clause appropriating \$50,000 "to enable the Interstate Commerce Commission to investigate in regard to the use and necessity for block signal systems and appliances for the automatic control of railway trains, including experimental tests, at the discretion of the Commission, of such of said signal systems and appliances only, as may be furnished in connection with such investigation free of cost to the Government, in accordance with the provisions of the joint

be good at any time and be able to be used by anybody in addition to the original purchaser. In proposing this legislation the mover stated that in the United States no such general restrictive regulation on this subject could be found as existed in Canada. This statement, however, neglected the admitted evils of the situation in the United States. The anti-scalping legislation of Canada was passed in 1882. The main object of the legislation was to prevent frauds on unsuspecting travelers. While the frauds connected with scalping had not gone to the length they have since gone in the United States, they were none the less sufficiently prominent to demand legislative regulation. The legislation existing in Canada so safeguards the situation that excursion rates may be made without the rigid restrictions which the existence of scalping necessitates in the United States. Under an arrangement in force since the beginning of the present year the holder of an unused ticket may present it at the ticket office where it was sold and receive a refund at once. If a ticket has been partially used, then the unused portion will be promptly redeemed on its transmission to the general office through any ticket agent of the railroad. All claims for refunds must be made in 30 days from the date of issue of the ticket. The law provides that when such a refund is made there is to be repaid the cost of the ticket, less the ordinary and regular fare for the distance for which the ticket has been used. Suppose a round trip ticket has been obtained for \$18, where the single fare is \$10. Then if the ticket is used only one way there would be a refund of \$8, and the traveler would have his one-way trip at the same rate as a person buying a one-way ticket. If there is an

excursion rate of \$8, for the same round-trip journey, then the traveler who has used the ticket for a one-way trip only would not receive any refund on the unused portion, since he has already received a one-way trip for less than the regular one-trip fare. The existing regulations have worked well. There have been few attempted violations of the regulations; and these have been summarily punished. It cannot be said that any real grievance exists.

The movement for the reduction of the statutory maximum from 3 cents, which is the maximum in the older settled sections, to 2 cents has obtained prominence in connection with the chartering of the Grand Trunk Pacific. The original charter of the Grand Trunk, passed in 1852, contained a provision for third class cars at a rate of 1 penny per mile. Some such cars were operated as late as 1857; since that date there have not been any in operation. In 1860 a Toronto lawyer applied, to make a test case, for a third class ticket for a passenger. He was unable to obtain it, and the legal representative of the railroad stated that the third class cars were simply like cattle cars. The Attorney-General, when applied to to take action in the matter, refused on the ground that the alleged grievance was of minor importance. In the discussion in Parliament, in connection with the granting of the Grand Trunk Pacific charter in 1903, it was urged that there should be a statutory 2 cent rate; and attention was attracted to the apparent disregard by the Grand Trunk of the provision in its charter. In October, 1906, another test case was instituted against the Grand Trunk to compel the sale of a third class ticket at a 2 cent rate. In the proceedings before the police magistrate in Toronto it was found, in December, 1906, that such a rate was provided for in the charter; and that, in not granting this accommodation at a 2 cent rate, the railroad was in technical violation of its charter. The matter will probably go to the higher courts.

So far as the original provision of the charter is concerned there can be no real dispute as to the fact. There has, however, been no real grievance. The public has acquiesced in the condition. The provision of the statute resembles various statutes on the British statute book which though unrepealed have come to an end by non-use. The situation in Canada is complicated by the passage of the Railway Commission legislation which placed both passenger and freight rates under the jurisdiction of the commission. To clear up the situation the Grand Trunk has applied to Parliament for legislation to rescind the section of its charter providing for third class accommodation at a 2 cent rate.

On February 25, 1907, Mr. Maclean's bill providing for a general maximum 2 cent rate was given the six months hoist, the bill being thereby killed. The mover of the measure claimed that such legislation had been successful in the United States. He argued that the question involved a matter of general policy on which a general rule should be laid down by Parliament. The government was opposed to this position. The Minister of Railways, Mr. Emmerson, stated that the complaint that there had been passenger discriminations must be settled not on the basis of general accusation but of adequate statistics. It would at the same time be unwise to impose a uniform rate regardless of difference in local traffic conditions. The Prime Minister, Sir Wilfrid Laurier, in upholding the same contention, said that while a 2 cent rate could be justified in Michigan by density of population identical conditions did not exist in Canada.

The general question of passenger rate revision has been referred to the Railway Commission for such action as it deems expedient, it being understood that there will be an adequate preliminary investigation. There was some suggestion that the commission be asked to take immediate action. The chairman of the commission urged, however, that such a recommendation be not made. In favor of delay he urged the congestion of business before the commission. The duties of the commission have indeed been subject to continuous expansion. It is now apparent that to cope with its increased responsibilities there should be increase of staff and rearrangement of personnel. To its original extensive jurisdiction over railroad matters there have been added supervision of express and telephone charges; and it is suggested that Pullman charges should be included in the expanding list. Like the English commission, the Canadian body is gradually becoming a general industrial court. It is apparent that an administrative body, such as the commission, is better fitted to deal with rate questions than a cumbrous body such as Parliament, which cannot adequately deal with matters requiring the consideration of complicated detail; and which at the same time, like any legislative body, is liable to be stampeded. It must at the same time be recognized that a considerable part of the increase in the commission's jurisdiction is attributable to the ease of referring troublesome questions to a standing organization.

In any attempt to deal with passenger rates in Canada there must be considered the conditions of the localities affected. In the early days of the St. Lawrence & Atlantic Railroad, now part of the Grand Trunk system, it was on one occasion calmly announced that the road would be closed for three weeks to permit the locomotives to be put in shape for the summer traffic. Such conditions

have long since passed away. During the winter season in Canada passenger traffic is light while expenses are heavy. In February, 1905, it cost the Grand Trunk \$1.25 to earn \$1 from its passenger trains; while in February, 1906, when the climatic conditions were much more favorable, the figures were \$1.04 for every \$1 earned. In the winter of 1903-4 it cost the Grand Trunk \$379,000 to remove snow on its Canadian lines, while at the same time there was a falling off in traffic. Of this expense a proportion was legitimately chargeable against passenger business. The snow blockades during the present winter in the Canadian Northwest, while unusual for that section, have entailed great expense and loss on the Canadian Pacific and the Great Northern. Other costs have also been increasing. During 1905 the Canadian Pacific and the Grand Trunk paid \$1,050,000 in duty on coal imported from the United States. This is an item of cost to which the American railroads in the 2 cent belt are not subjected. The increasing burden of taxation on railroads, especially in Ontario, must be recognized; and this aside from any question whether the roads have made an adequate contribution to provincial revenues in the past.

In such a question the comparative density of traffic and population is a very important factor. In 1905 the Massachusetts lines earned from passenger traffic \$7,357 per mile of track, while the average in Canada was one-fifth of this. In the same year the New York, New Haven & Hartford Railroad operated on the average 7,481 passenger-train miles per mile of single track against 1,341 on the Canadian lines. At the same time the former earned \$1.59 per passenger-train mile, or 40 cents more per passenger-train mile than the Canadian lines. Massachusetts carries 25,037 passengers per mile of track against 1,231 on the Canadian lines. Ontario, the most densely settled section of Canada, has an average population of 10 persons per square mile of area, while Massachusetts has 350. From the standpoint of density of population it should be noted that the states of Pennsylvania, New York and Massachusetts, in which 2 cent rates are to be found, have a population of 16.3 millions, while Canada's total population is not more than one-third of this. The following table presents some data in a comparative form:

	Ohio.	Michigan.	Canada.
Population to square mile of area.....	102	43	1.4
Passenger train miles per mile of road.....	3,043	1,633	1,340
Earnings of passenger trains.*.....	\$3,071	\$1,724	\$1,666
Government pay for mail service:			
Per train mile .....	10c.	9.2c.	(a) 6c.
Per mile of road .....	\$547	\$156	(a) \$112 (b) \$70

(a) Grand Trunk in Canada; (b) Canadian Pacific in Canada.

\*From passengers, mails and express, per mile of road.

The average rate on the Canadian railroads is well within the normal 3 cent maximum. For the year ending June 30, 1906, the average passenger rate on the Canadian Pacific was 1.8 cents. On Canadian roads generally, only about one-fifth of the passengers travel on one-way tickets; the remainder of the travel makes up more than 17 classes of passengers who buy tickets at reduced rates, e.g., return tickets, commercial travelers, excursion tickets, convention rates, etc. The average rate on the Canadian Pacific has been reduced from 2.45 cents in 1885 to 1.80 cents in 1906, or a reduction of 26.5 per cent. in 11 years.

Arguments from the rate arrangements existing in densely settled sections of the United States are not pertinent to the conditions existing in Canada. It is apparent that an indiscriminating application of a 2 cent maximum would, by neglecting local differences, in many cases entail losses on the Canadian railroads. The problem of passenger rates can no more be settled in Canada than in other countries by inflexible rules. At the same time if real grievances appear, the existing regulative machinery is amply adequate to deal with them.

#### Foreign Railroad Notes.

In spite of the inability of the Italian State Railroads to carry the traffic offered, their gross earnings were 7 per cent. more in the last half of 1906 than in the corresponding half of 1905. In no country in the world, doubtless, have the railroads failed so much in doing their work as in Italy during this period; and in every important country of Continental Europe they have been inadequate to the traffic offered, mainly because the traffic increased beyond all expectations.

To fill a vacancy in the presidency of the Krugsberg directory of the Prussian State Railroad the appointment is announced of an official whose career has been in mechanical engineering, and it is remarked that this is the first instance of the promotion to that position of an official in that branch of the service. By far the larger number of the presidencies are (or were till very recently) occupied by men who had a juristic training, though they entered the railroad administrative service young. But the technical officers seem to find more favor now than formerly. At the same time with the appointment of this mechanical engineer, that of a civil engineer to another presidency was announced.

# GENERAL NEWS SECTION

## NOTES.

The West Jersey & Seashore has taken off a number of trains between Camden and Atlantic City, both steam and electric, and has laid off 50 trainmen.

The State Railroad Commission of South Dakota has issued an order to the railroads of the state to reduce rates on the first, second, third and fourth classes of freight 10 per cent., beginning March 15.

The Governor of Nebraska has allowed the 2-cent fare bill to become a law without his signature. He declares that the legislature must take the responsibility. The Burlington road has announced that it will not contest this law in the courts.

In the legislature of Arkansas a bill has been introduced to punish, as a misdemeanor, the offering, demanding or accepting of any valuable consideration for furnishing or setting freight cars. The bill is designed to stop the bribing of yard foremen and conductors.

A man in Texas swindled the Gulf, Colorado & Santa Fe Railway out of \$75,000 by getting a bill of lading for cotton without delivering the goods, and the Grand Jury of Bell County has refused to indict him because the people of the county are so largely "agin' the railroads."

The Baltimore & Ohio announces an increase of five cents a ton, beginning May 1, on bituminous coal bound for eastern tide-water points, except points in New England. It is expected that the other roads carrying soft coal to the Atlantic seaboard will make the same advance.

The Monongahela River Consolidated Coal and Coke Company, of Pittsburg, on February 25 took contracts aggregating 1,000,000 tons. The largest was with the Southern Pacific, which will take 250,000 tons at its wharves at New Orleans.

The bill proposed by Governor Hughes to reorganize the New York State Railroad Commission and to consolidate the railroad and the gas commissions, was introduced in the legislature on Wednesday. It embraces an elaborate railroad law, modeled somewhat after the Interstate Commerce law, and fills 128 printed pages.

In the year 1906 the Pennsylvania Railroad paid pensions to retired employees amounting to \$467,614, and the company has appropriated for pensions hereafter \$600,000 a year, which is twice the sum allotted when the pensions were begun in 1900. There are now 1,940 men on the pension rolls of the company. Two hundred have died within the past year. Since 1900 the pension department has distributed about \$2,500,000, and the number of men retired up to the present time is 3,031.

At Broad Street Station, Philadelphia, the Pennsylvania is now using four baggage trucks which are fitted with electric motors. The trucks are described as looking like the common four-wheel hand truck. The man in charge grasps the tongue, and appears at first glance as if he were drawing it; but he is only steering. He controls the power by a button in the handle of the tongue. At Jersey City there is an electric truck which is as large as a two-horse wagon. On this the attendant rides.

According to a press despatch from Toledo the Canton and Massilon bridge companies have been fined \$1,500 each in the Allen County Court for conspiracy in restraint of trade. The fines were assessed under a compromise agreement between the companies and the prosecutor. The officers of these companies had been indicted as individuals, and these indictments will not be prosecuted. Eight other bridge companies are said to have been indicted in the same way as those named, and it appears that they are in a similar situation. These eight are Huston & Cleveland, Owego-Oregonia, Bellefontaine, West Virginia, Mt. Vernon, Champion Bridge, the West Virginia Bridge & Iron and Brackett Bridge & Iron, Cincinnati, now in the bankruptcy court.

The Interstate Commerce Commission in an opinion by Commissioner Prouty has announced its decision in the case of The Cattle Raisers' Association of Texas against the Galveston, Harrisburg & San Antonio, and others, in favor of the complainant. On complaint of failure by defendants to establish a through route and joint rate on beef cattle from points on the International & Great Northern to New Orleans, it appeared that a former through rate of 45 cents per 100 lbs., except from Laredo, from which it was 47 cents, was discontinued by defendants other than the International & Great Northern on October 14, 1906, because of dissatisfaction with the rate divisions; that there is no other practicable route to

New Orleans, and that much inconvenience and loss have resulted to shippers from discontinuance of the route. The Commission rules that the public interest requires establishment and maintenance of the through route and joint through rates, and that the route and former joint rates should be established. No opinion upon the reasonableness of such rates is expressed, and this decision is without prejudice to determination of the question of reasonableness which may be involved in another proceeding now pending.

The Supreme Court of Indiana has decided that the employers' liability act of that state is unconstitutional as applied to all corporations except railroads, and has reversed the case of The Bedford Quarries versus Bough. The ground for regarding the act as unconstitutional with regard to private corporations is that it discriminates as between employers (between corporations and natural persons) engaged in the same business. With regard to railroads the act is upheld because of the peculiar character of their business, and the extraordinary dangers incident to railroading, and because the law makes it practically impossible for an individual to operate a railroad by reason of lacking the powers of eminent domain and other privileges conferred on railroad companies.

## The Right Kind of Conciliation.

Comptroller A. H. Plant, of the Southern Railway Company, announces one of the most sensible improvements in railroad management that has come to our notice for many days—the appointment of traveling freight claim agents who are to actually come in contact with the claimants. Mr. Plant says:

The duty of the Traveling Freight Claim Agents will be to travel continuously in the respective territories assigned to them, visiting at each station not only the local agent, but the company's patrons with the following objects in view:

(1) To secure the prompt handling and settlement of all fair and honest loss, damage and overcharge freight claims against the company.

(2) To give assurance of this to the patrons of the company by prompt, courteous and efficient attention to their rights.

(3) To prevent accumulations of freight claims and over and refused freights at stations and to reconcile as far and as promptly as possible all over freights with shortages.

(4) To educate local agents to the highest degree of efficiency in treating with patrons in respect to their transactions with them both in respect to the handling of freights at their stations and the prompt payment or declination of freight claims.

## Plain Talk from G. L. Peck.

Recent wrecks on Indiana railroads have been under investigation by the State Railroad Commission, and at a private session of the commission General Manager G. L. Peck of the Pennsylvania Lines West made the following statement:

In railroading, the greatest safeguard is in careful administration all the way from the top down, rather than in particular rules or legislation. The price of safety on a railroad is eternal vigilance, and that is what you must depend upon in the final analysis. No matter how many laws you make, unless we have efficient officers, efficient men and efficient organization, which it would be very difficult to prescribe by law, we are going to continue to have accidents.

If I could be furnished with all the money that I want to put the railroads in my charge in the safest possible condition I feel that I could make them very much safer than they are to-day. But there is a limit as to what I can do under existing conditions.

I would like at once to install the most approved forms of signals on the main lines where the passenger traffic is the heaviest. But if I should attempt to do that this year I would not have any money for interest. If I should attempt to borrow the money to do this most important duty to the public and our patrons my executive officers would say to me that their credit had already been extended to such an extent in their endeavor to meet the various demands of the public, the shippers, the traveling public, the stockholders and the employees that they did not feel that they could go further. That is the exact situation to-day on the road I represent.

Supposing that I had the money, I would have the block system everywhere; I would build, in addition, a great many miles of double track, so that where the traffic was the heaviest I would avoid such accidents as that at Woodville. The first duty of the railroads, the first duty of the legislature, the first duty of the people, is to see that their railroads are safely operated. But what causes me grave alarm is the fact, taking my own particular case and desiring as I do to meet the situation, that I am unable to do it because of the fact that we cannot borrow money for the im-

provement or raise the rates to furnish the revenue for expenditure in that field.

Now, as to new criminal laws punishing railroad men for wrecks: I should not fear so much if the commission had the power when a wreck occurred on my railroad to call me here and punish me. But I would fear a law providing that if a wreck happened I should go to jail. There is this distinction: You would be given some latitude to investigate all the facts and would not be bound down to inflexible statutes.

I should not like to be understood as advocating a law of this kind, for the reason that I should fear that it might not always be possible to place the responsibility exactly where it belongs. It is difficult for railroad officials to do it. I think you ought to punish employees for violating the rules, but in the case of an officer it would be very difficult to put your hand on the right one, and in many instances it would be very hard even for a court, unless it were a court composed of railroad officials and employees, to make an equitable decision as to whether the man was guilty or not.

Now as to the age and working hours of employees. I was a telegraph operator when I was 16 and a train despatcher when I was 18, and I feel that I was a better train despatcher when I was 18 than when I was 28. I was, as a matter of fact, a better one. I didn't have the timidity that I got with the increase of responsibility. Generally, except at very busy places, telegraphers work twelve hours. To a hod carrier that sounds very long. It wouldn't have sounded long to me. I used to work eighteen hours as a train despatcher, but I didn't have the benefit of modern ideas on these matters. I would not say that I approve of long hours, but it is not always easy to arrange for short hours. The men know that.

If you should attempt to put the whole business on eight hours a day you would stop all the railroads. You couldn't get operators enough to do the work. It is just so with trainmen; you could not run your trains on eight hours; you could not handle the business and you could not get the men.

It ought to be possible for any operator to keep awake. I have done it myself for fifteen years, day and night. In my case I would go home, eat breakfast, lie down until lunch, and then go to the ball game when I ought to have been in bed. That is the trouble in many of these cases of going to sleep. It isn't because the man hasn't the opportunity to go to sleep; it is because he has not availed himself of it. Legislation cannot prevent that.—*Indianapolis Star*.

#### The "Railroad Club."

A number of prominent railroad and financial men of New York City are forming a social club, under this name, and it is said that they have engaged the two top floors of the Cortlandt street building, which is being put up at Cortlandt and Church streets by the Hudson & Manhattan Railroad—the Cortlandt street tunnel. The building will not be finished for a year or more. Among the men named as charter members are Cornelius Vanderbilt, Howard Gould, H. H. Vreeland, E. P. Bryan, W. H. Marshall, Ralph Peters, F. D. Underwood and others of equal prominence.

#### Technical Publicity Association.

The Technical Publicity Association held its "Railroad Night" at the rooms of the Aldine Association, New York City, on February 28. G. M. Basford, Assistant to the President of the American Locomotive Company, read a paper on "The Progress in Transportation." The following companies were represented by members at the dinner: A. Allan & Son, the T. R. Almond Manufacturing Co., the American Locomotive Co., the American Wood Working Machinery Co., the A. S. Cameron Steam Pump Works, the Crocker-Wheeler Co., the General Electric Co., Hammacher, Schlemmer & Co., the Ingersoll-Rand Co., the H. W. Johns-Manville Co., the Lidgerwood Manufacturing Co., the New York Edison Co., the New York Telephone Co., the Niles-Bement-Pond Co., the Sprague Electric Co., and the Yale & Towne Manufacturing Co.

#### The Congo Railroad.

The Congo Railroad earned net about 18 per cent. on its capital stock in its fiscal year ending with June last. Nearly 90 per cent. of its earnings were from freight, and the working expenses were but 28 per cent. of the gross earnings. It must be remembered that its comparatively short railroad is the sole outlet for some thousands of miles of navigable rivers.

#### New Chinese Railroad Opened.

The Chaochowfu & Swatow, which is the first railroad in China built with Chinese capital, was recently opened for traffic. It runs from Swatow, a treaty port in the province of Kwangtung at the mouth of the Han river, north 30 miles up the river to Chaochowfu. The grades are low and the curves few. Japanese hardwood sawed ties and American rails, angle bars and spikes

were used. The road has three 54-ton American-built locomotives, 22 passenger coaches and some small freight cars. The first-class coaches are corridor cars, seating 50 passengers, and were built in Japan. A standard train is made up of 14 coaches and a guards' van, the latter and the locomotive being fitted with brakes. The one-way first class fare is 67 cents gold, and second class 27 cents. The distance of 30 miles is covered in about 1½ hours. The enginemen, conductors and the train despatcher are Japanese; the train auditors and all other employees are Chinese. Train orders are given by telephone.—*Consular Report*.

#### Speed Limits on New York Central.

The New York Central has issued an order that hereafter trains within the electric zone must not be run over 45 miles an hour on straight track, and not over 35 miles an hour on curves.

#### London & North-Western.

Gross earnings of the London & North-Western for the year ended December 31, 1906, were \$72,581,521 (£1 = \$4.85); operating expenses, including taxes, were \$46,661,821, leaving net earnings of \$25,919,700. Other income amounted to \$2,161,965, and the net income was \$21,465,819, of which \$21,199,287 was paid in dividends, leaving a surplus for the year of \$266,532, of which \$145,500 was deducted and credited to the general reserve account. The surplus in 1905 was \$455,289, so that the surplus on hand December 31, 1906, was \$576,321. There were 85,990,919 passengers carried during 1906, and the passenger train mileage was 29,296,499; there were 51,582,307 tons of freight carried, and the freight train mileage was 19,195,784.

#### Prussian Hours of Labor.

The Prussian regulations prescribe that a railroad man may not be employed in night service more than seven nights successively. It being questioned whether seven was not too great a number, inquiries were made of all the separate managements, whose medical advisers were generally of the opinion that frequent changes from day to night service are bad, as it takes some time for the system to adjust itself to new habits. The action taken is to require an interval of 30 to 36 hours between a week of day and a week of night service, this, when possible, to be between Saturday and Monday.

#### For the Comfort of Trainmen.

Rest and bunk houses on the Pennsylvania Railroad east of Pittsburgh now number about fifty. Beds, lockers, baths, reading rooms and games are the usual equipment of these terminal and freight yard resting points, but some of them have mechanical and air-brake equipment for instruction of the men. Following are notes concerning some of these houses:

The Filbert street rest house in Philadelphia is the largest. It has eighty beds, 1,000 lockers, baths, and a library of 1,200 volumes; the reading room is used daily by more than 1,000 men. The building and its furnishings cost \$38,655 and the monthly cost of maintenance is \$750. In Philadelphia there are also buildings at West Philadelphia, at Round House No. 2 at Forty-sixth street; at Greenwich and at Gray's Ferry.

On the New York division there are at Jersey City, Harsimus Cove, Greenville Yards, Waldo avenue, Meadows, Coalport, Trenton, West Morrisville and Chestnut Hill. At Jersey City there are five separate rooms with accommodations for 58 men, tub and shower baths, electric fans, steam heat, hot and cold water.

On the P. B. & W. there are houses at Lamokin, Thurlow, Wilmington, Newark Center, Perryville, Bayview and Cox. At Washington there are seven bunk rooms and shelters, some of them having reading rooms. Other rest rooms are at Delmar (reading room), Harrington, Oxford, Lewes, Franklin City, Centreville, Wawa, West Chester, Oxford and Perryville.

On the Philadelphia and Erie and the Northern Central there are ten houses. At Kane, Pa., the rest house was recently destroyed by fire. To take its place there is now under construction a two-story building, with reading, smoking, locker and toilet rooms on the first floor, and four bedrooms, baths and toilets on the second floor. The contract price of the building is \$6,539, and the estimated cost of maintenance \$44 per month, exclusive of lighting. Other houses or rooms are located at Renovo, Calvert Station, Cockeyville, Harrisburg, Columbia, Marysville and at Canandaigua and Williamsport on the Elmira and Canandaigua Division.

At Buffalo the trainmen share with men of other roads the conveniences of the Y. M. C. A. At East Aurora, Olean and Emporia on this division trainmen use rented furnished rooms in houses near the station. Also at Corry, Brockton and Oil City. The bunk houses of the Rochester Branch are located at Rochester and Nunda. Sleeping rooms are provided on the Alleghany Division at Oil City, Phillipston, Braeburn, and, on the Low Grade Branch at Driftwood. Other houses are at Pottsville, Phoenixville, Paoli, Harrisburg, Enola, Altoona, East Altoona and Hollidaysburg.

The mechanical instruction room at East Altoona contains air-brakes, injectors, etc. The monthly cost of maintenance is \$130.

Besides the Twenty-eighth street Y. M. C. A. and the passenger trainmen's barracks in Pittsburg, the trainmen of the Pittsburg Division use rooms at Pitcairn, Youngwood and Conemaugh.

#### A Public Technical School at Altoona.

The industrial department of the Altoona High School has received as a gift from the Pennsylvania railroad an elaborate equipment that places it in this respect on a par with the foremost technical schools in the United States. There is to be a four-year course and the railroad expects to secure from the school candidates for its shops who will enter them on a footing between that of the regular and the special apprentices. The city of Altoona secures a splendidly equipped industrial school and the total investment in the new high school will be \$350,000.

A. E. Karlson is director of the Department of Industrial Arts. The four-year programme is similar to that in other schools of the kind.

The equipment includes 25 utility adjustable drawing tables, 36 x 48, five combination 37 x 50 drawing tables, electric blue printing machine, 20 single benches 5 ft. by 24 in., fitted with standard tail vises and cabinet makers' vises, one wood trimmer, three mitre machines, twelve sets and many special carving tools, a 24-in. surface planer, Universal saw bench, scroll saw, hand planer and joiner, 18-in. swing, 10-ft. pattern makers' lathe and star brazing lamp and forge. Eighteen 12-in. swing speed lathes to turn 24 in. between centers; eight double benches with special vises, wood trimmer with all attachments, motor-driven grindstones; a 32 x 36 in. natural draft brass furnace; a patent core oven and complete equipment for both bench and floor moulding. In the forge shop: 24 down-draft forges, a power hammer and completely equipped anvils and benches. In the machine shop: Head engine lathe, 16 in. by 8-ft. bed; two 6-ft. lathes, an engine lathe, a speed lathe, universal milling machine, spur-gear planer, crank shaper and upright drill press, wet tool grinder, benches with special ironworkers' vises and a complete outfit of tools. The shops have been laid out by Pennsylvania engineers in conjunction with Director Karlson. There is no belting or shafting in any of the shops. In most cases the motors are directly connected or are built as a part of the machine; there are in all thirty-nine motors, ranging from  $\frac{3}{4}$  to 15 horsepower.

#### Bonus for Railroad Extensions in Denmark.

The Danish Minister of Transportation has laid before Parliament a plan for a considerable extension of the railroad system of the country, coupled with a financial plan which the railroads in this country must mourn not to have had applied to them. The real estate affected by the proposed railroads is to be appraised, and if it is increased in value more than 10 per cent. by the railroads a part of this increase is to go toward paying for their cost. Apply that to Kansas City, Omaha, Chicago, Indianapolis, etc. A moderate proportion of increase in value would have paid for the railroads twice over, to say nothing of the farm lands.

#### Manufacturing and Business.

The National Foundry Co., Erie, Pa., made the first "heat" last week at its new open-hearth steel casting plant.

Stanley Woodworth has been appointed Chicago representative of the Northwestern Malleable Iron Co., Milwaukee, Wis., with office at 701 Fisher Building.

D. E. Baxter & Company, railroad contractors, New York, have ordered from S. L. Benz, Pittsburg, Pa., 26,500 standard cross ties for the Harrisburg & Ohio River, for immediate delivery at Galatia, Ill.

George Moses has resigned from the mechanical department of the Southern Railway to become traveling representative in the east and south for James B. Sipe & Co., Allegheny, Pa., makers of Japan oil.

A. C. Dallach, Assistant to the Passenger Traffic Manager of the Chicago, Burlington & Quincy, has been appointed Assistant to the Vice-President of the American Colortype Company, Chicago, effective April 1.

F. T. Bentley has been appointed Western Traffic Manager of the Universal Portland Cement Co., with office in The Rookery, Chicago. L. C. Bihler has been appointed Eastern Traffic Manager, with office in the Carnegie Building, Pittsburg.

The Rail Joint Company of Canada, Limited, has taken over the patents and business of the Continuous Rail Joint Company of Canada, Limited, and has begun the manufacture of their products in Canada. The general offices are at 216 Board of Trade Building, Montreal, Canada.

#### Iron and Steel.

The Hudson Companies has given to the American Bridge Company an order for 2,400 tons of structural steel for the Church street terminal station, New York.

During the last week of February, and including the first two days of March, the orders booked by the fabricating shops showed a considerable increase over the previous three weeks, making the total orders for February between 90,000 and 100,000 tons. Of this amount the American Bridge Company has orders for 50,000 tons. The February orders include 8,300 tons for the east approach to the Blackwell's Island bridge, New York; 2,300 tons of fabricated steel for bridges for the St. Louis & San Francisco; 600 tons for the Baltimore & Ohio; various orders aggregating 4,000 tons for the New York, New Haven & Hartford, divided between the Pennsylvania Steel Company and Ridder & Conley, of Pittsburg. The New Haven is in the market for between 600 and 700 tons additional. The St. Louis & San Francisco and the Baltimore & Ohio orders were given to the American Bridge Company. A total of about 100,000 tons of structural and fabricated steel is pending which will probably be let during March. The Great Northern is negotiating for 6,000 tons of steel for bridges.

#### OBITUARY NOTICES.

Frank Van Dusen, Chief Assistant General Passenger Agent of the Pennsylvania Lines West of Pittsburg and Erie, died on March 4 at Pittsburg of pneumonia; his wife died two hours later from the same disease. Mr. Van Dusen was born in Cincinnati in 1845, and came to Pittsburg in 1880 as Assistant to E. A. Ford, then General Passenger Agent of the Pennsylvania Company.

Major William L. Smith, General Agent of the Illinois Central at Memphis, Tenn., who was drowned on February 22 in Menesha Lake, Ark., with his son, was 45 years old. He was born in Virginia, and began railroad work in 1883 as a freight clerk on the Memphis & Charleston, now part of the Southern Railway. The next year he was made chief clerk to the General Superintendent of that road, and in 1888 was appointed Secretary to the Vice-President and General Manager of the Louisville, New Orleans & Texas, which is now a part of the Yazoo & Mississippi Valley. In 1890 he was made traveling freight agent of the same road, and the next year contracting freight agent at Memphis. Two years later he was made commercial agent of the Illinois Central and the Yazoo & Mississippi Valley at Memphis, and in 1896 was promoted to be Assistant General Freight Agent of both roads. He was made Assistant to the Second Vice-President in 1903, and in November, 1906, was made General Agent at Memphis, reporting directly to the President, and acting as his representative in southern territory.



W. L. Smith.

#### TRADE CATALOGUES.

*Flue Gas Analysis.*—J. A. Caldwell, 45 Broadway, New York, United States agent for Sanders, Rehders & Co., London, sends a pamphlet describing the Sarco Automatic CO<sub>2</sub> Recorder, which is made by the English company. This machine makes a continuous analysis of flue gases and records on a chart the varying percentage of carbon dioxide; as this percentage depends on the amount of air admitted to the firebox, the record shows at once whether the proper amount of air is being admitted for getting the most nearly complete combustion.

*Rock Drills.*—Catalogue No. 46 of Ingersoll-Rand Co., New York, fully describes the rock drills made by the company. It gives sizes, capacities and prices, and is well illustrated with half-tones of machines and parts, and line drawings showing the construction. Full lists of all repair parts are included.

*The Los Angeles Limited.*—This unusually attractive pamphlet is being distributed by the passenger department of the Chicago & North-Western. It is 6 x 8½ in., artistically illustrated with full-page and half-page colored half-tone and uncolored corner engravings.

ings. The letter press is in three colors. The binding is unique and bears embossed colored designs. The train described runs over the Chicago & North-Western, the Union Pacific and the San Pedro, Los Angeles & Salt Lake.

**Asphalt and Rubber Products.**—The Standard Asphalt & Rubber Co., Chicago, has a new catalogue concerning its products, which include paving asphalt, asphalt filler, mastic matrix, asphalt roofing, mineral rubber water-proofing, pipe dips and coatings, insulation and mineral rubber. The composition and qualities of the asphalt are explained, and the other products are covered in detail. The pamphlet is arranged for insertion of future leaflets on this company's products.

**Saws.**—The Champion Saw Co., Pittsburg, Pa., sends a catchy little folder entitled "The Champion and the Mexican." It calls attention to the analogy between the use of old-fashioned saws by conservative manufacturers and the Mexicans' use of wooden plows.

#### MEETINGS AND ANNOUNCEMENTS.

(For dates of conventions and regular meetings of railroad conventions and engineering societies, see advertising page 24.)

##### Meeting of the Franklin Institute.

At the meeting held on March 7 a paper on "The Modern Locomotive," by Paul T. Warner, was presented.

#### ELECTIONS AND APPOINTMENTS.

##### Executive, Financial and Legal Officers.

**Gulf & Interstate.**—E. M. Barnes, Treasurer, has been appointed Auditor, succeeding George W. Barnes, resigned. W. C. Brothers has been appointed Treasurer, succeeding E. M. Barnes.

**Illinois, Iowa & Minnesota.**—F. M. Clark has been elected Secretary, with office at Chicago, Ill., succeeding as Secretary, J. C. Duffin, General Superintendent.

**Illinois Valley Belt.**—A. E. George has been elected Secretary and Treasurer, succeeding J. P. Griffin.

**Natural Bridge Railway.**—The officers of this company are as follows: President, J. L. Phillips; Vice-Presidents, J. S. Gordon and Charles Phillips, all of Thomasville, Ga.

**Pittsburg & Lake Erie.**—See Pittsburg, Chartiers & Youghiogheny.

**Pittsburg, Chartiers & Youghiogheny.**—J. M. Schoonmaker, Vice-President of the Pittsburg & Lake Erie, has been elected also President of the Pittsburg, Chartiers & Youghiogheny, succeeding Joseph Wood, resigned. J. G. Robinson, Secretary and Treasurer of the Pittsburg & Lake Erie, and Treasurer of the P. C. & Y., has been elected also Vice-President of the P. C. & Y. T. H. D. McKnight, Treasurer of the Pennsylvania Lines West, has been elected also Secretary and Treasurer of the P. C. & Y., succeeding, as Treasurer, Mr. Robinson.

**Western Pacific.**—The following new members of the Board of Directors have been elected: F. W. M. Cutcheon, General Counsel of the company, and L. H. Calef, Secretary and Treasurer of the Missouri Pacific. They succeed W. W. Miller and Warren Olney, Jr.

##### Operating Officers.

**Boston & Albany.**—W. J. Fripp, Superintendent of the River division of the New York Central & Hudson River, has been appointed General Superintendent of the Boston & Albany, succeeding J. B. Stewart. See New York Central & Hudson River.

**El Paso & Southwestern.**—See Sonora Railway.

**Kentwood & Eastern.**—J. Shull has been appointed to the new office of Superintendent, with headquarters at Kentwood, La.

**New York Central & Hudson River.**—Miles Bronson, Superintendent of the Harlem division, has been appointed Superintendent of the River division at Weehawken, N. J., succeeding W. J. Fripp, appointed General Superintendent of the Boston & Albany. G. F. Van Tassel, Trainmaster of the Harlem division, succeeds Mr. Bronson as Superintendent, with headquarters at White Plains, N. Y.

**New York, New Haven & Hartford.**—A. W. Honywill, chief clerk to the General Superintendent, has been appointed Superintendent of the Hartford division, succeeding W. L. Derr, resigned.

**Norfolk & Western.**—B. W. Browning, Assistant Trainmaster of the Norfolk division, has been appointed Trainmaster in charge of terminals at Norfolk.

**Oregon Short Line.**—S. E. Canady has been appointed Trainmaster of the Utah division, with jurisdiction over the First and Sixth districts, the Cache Valley and Malad Valley branches and the Salt Lake joint yard, with headquarters at Salt Lake City, Utah, succeeding E. N. Botsford, now Acting Assistant Superintendent.

**Seaboard Air Line.**—T. F. Whittelsey, heretofore Second Vice-President and General Manager of the Mobile, Jackson & Kansas

City, has been appointed General Manager of the Seaboard Air Line, with office at Norfolk, Va., succeeding, as General Manager, W. A. Garrett, recently elected President. Mr. Whittelsey was born in 1856 in Kentucky, and began railroad work in 1876 as a freight clerk on the Lake Shore & Michigan Southern at West Detroit, Mich. Two years later he went to the engineering department of that road as a clerk at La Porte, Ind. In 1881 he was made assistant track master at Toledo, Ohio, and the next year was made track master at Englewood, Ill.

T. F. Whittelsey.

He was appointed Superintendent at Kalamazoo, Mich., in 1887, and the next year was transferred to Hillsdale, Mich. He was transferred to Toledo, Ohio, in 1890, as Superintendent of the Michigan division, and in 1893 left the company to become General Superintendent of the Toledo & Ohio Central and the Kanawha & Michigan. In 1901 he was made General Manager in charge of construction and operation of the Toledo Railway & Terminal Company, and in the spring of 1905 was appointed General Manager of the Mobile, Jackson & Kansas City. He was later elected also Second Vice-President, which position he left on March 1 to go to the Seaboard Air Line.

J. M. Shea, Superintendent at Birmingham, Ala., has been appointed Superintendent of the Second division, with office at Raleigh, N. C.

**Sonora Railway.**—A. R. Oster, Superintendent of the Eastern division of the El Paso & Southwestern, has been appointed Assistant General Manager of the Sonora Railway, succeeding J. A. Naugle, resigned.

**Southern.**—W. J. Bell, Superintendent of the Columbus division, has been appointed Superintendent of the Macon division, with headquarters at Macon, Ga., succeeding Frank J. Egan, resigned. J. L. McClendon, Trainmaster at Macon, Ga., succeeds Mr. Bell, with headquarters at Williamson, Ga. J. C. Ellis has been appointed Trainmaster, with headquarters at Macon, Ga., succeeding Mr. McClendon.

##### Traffic Officers.

**Delaware & Hudson.**—William J. Mullin, who was recently appointed General Traffic Manager of this company, was born in Pennsylvania in 1863. He was educated at Whitehall, N. Y., and the Milton, Pa., Academy, and began railroad work in 1881 as a telegraph operator on the Pennsylvania. He was made agent at Selinsgrove Junction, Pa., in 1883. After being transferred several times, he went to the Delaware & Hudson in 1903 as southern and western freight agent at Philadelphia. A few months later he was appointed Industrial Agent of the company, and in 1905 was appointed Assistant to the Second Vice-President in charge of traffic, where he remained until his recent promotion.

**Great Northern.**—S. G. Yerkes, Assistant General Passenger Agent, has resigned to go into other business.

**Illinois, Iowa & Minnesota.**—Jonas Waffle has been appointed Assistant General Freight and Passenger Agent, with office at Chicago.

**Lake Shore & Michigan Southern.**—F. L. Talkert has been appointed General Eastern Freight Agent at Buffalo, N. Y. R. C. Kennedy has been appointed General Agent of the passenger department at Dallas, Tex.



**Mexican Railway.**—R. M. Mondragon, freight and passenger agent at Mexico City, has been appointed General Agent of the traffic department at Mexico City, succeeding H. A. Tolle, resigned to go to the Tehuantepec National.

**Mobile & Ohio.**—J. L. Moulton has been appointed General Agent at Mobile, Ala.

**Tonopah & Tidewater.**—H. E. Needham, General Agent at Ludlow, Cal., has been transferred to Los Angeles. C. J. Ennis succeeds Mr. Needham.

#### Engineering and Rolling Stock Officers.

**Canadian Pacific.**—J. C. Sullivan has been appointed Manager of Construction of Eastern lines, with office at Toronto. Division Engineers of Construction will report to him.

**Erie.**—E. A. Williams, General Mechanical Superintendent, has resigned, and the office has been abolished.

**Louisville & Nashville.**—J. J. Flynn, general foreman at Mobile, Ala., has been appointed Master Mechanic at Nashville, Tenn.

**Nevada Railroad.**—H. H. Hale, formerly Assistant Master Mechanic of the Pere Marquette at Grand Rapids, Mich., has been appointed Superintendent of Motive Power and Consulting Engineer of the Nevada Railroad and of the Nevada Consolidated Mining & Milling Company, with office at 11 Front street, San Francisco, Cal.

**New York Central & Hudson River.**—S. P. Hull has been appointed Engineer of Signals outside the electric division, with office at New York. J. J. Cozzens has been appointed Assistant Engineer of Signals, with office at Syracuse, in charge of installation and maintenance of signals on the Western district.

#### Purchasing Agents.

**Georgia Railroad.**—J. A. Best has been appointed Purchasing Agent, with office at Augusta, Ga.

**Southern.**—A. Gordon Jones has been appointed Purchasing Agent, with office at Washington, D. C., succeeding Joseph P. Minetree, deceased.

#### LOCOMOTIVE BUILDING.

The Virginia & Truckee has ordered one passenger locomotive from the Hicks Locomotive & Car Works.

The Wisconsin & Northern, now under construction, will shortly ask bids on 15 or 20 freight locomotives.

The Phosphate Mining Co., New York City, has ordered one locomotive from the Hicks Locomotive & Car Works.

The Hecla & Torch Lake is now being made standard gage and when the work is completed will buy some locomotives.

The South Manchuria Railway, which is being built by the Japanese Government, will, it is said, order locomotives in the United States.

The Terminal Railroad Association of St. Louis, as reported in the Railroad Gazette of February 22, has ordered 10 switching locomotives from the Baldwin Locomotive Works.

The St. Louis & San Francisco, as reported in the Railroad Gazette of March 1, has ordered 25 consolidation (2-8-0), 10 ten-wheel passenger (4-6-0), and 10 six-wheel switching (0-6-0) locomotives from the Baldwin Locomotive Works. The specifications are as follows:

##### General Dimensions.

Types of locomotives	Consolidation.	Ten-wheel.
Weight, total	207,000 lbs.	182,000 lbs.
Weight on drivers	182,000 lbs.	134,500 lbs.
Cylinders	22 in. x 30 in.	21 in. x 26 in.
Type of locomotive		Switching
Weight, total		120,300 lbs.
Cylinders		19 in. x 26 in.

The Seaboard Air Line, as reported in the Railroad Gazette of February 22, has ordered from the Baldwin Locomotive Works five simple ten-wheel passenger locomotives, 10 simple ten-wheel freight locomotives and 10 simple six-wheel switching locomotives, and from the American Locomotive Company 20 simple ten-wheel freight locomotives and five simple consolidation locomotives. The specifications are as follows:

##### General Dimensions.

Type	Switching
Weight on drivers	135,000 lbs.
Total weight	135,000 lbs.
Diameter of cylinders	19 in.
Stroke of pistons	28 "
Diameter of drivers	51 "

Type of boiler	Extended wagon top
Working steam pressure	190 lbs.
Heating surface, total	2,108 sq. ft.
Tubes, number	254
" material	Charcoal iron
" outside diameter	2 in.
" length	15 ft. 11 1/2 "
Firebox, length	66 "
" width	66 "
Grate area	30.25 sq. ft.
Tank capacity	4,000 gals.
Coal capacity	7 tons

Type	10-wheel passenger (Baldwin)
Weight on drivers	132,500 lbs.
Total weight	165,000 lbs.
Diameter of cylinders	20 in.
Stroke of pistons	28 "
Diameter of drivers	67 "
Type of boiler	Extended wagon top
Working steam pressure	200 lbs.
Heating surface, total	2,584 sq. ft.
Tubes, number	328
" material	Charcoal iron
" outside diameter	2 in.
" length	14 ft. 1 1/2 in.
Firebox, length	108 "
" width	41 1/4 "
Grate area	31.09 sq. ft.
Tank capacity	5,000 gals.
Coal capacity	9 tons

Type	10-wheel freight (Am. Loco. Co.)
Weight on drivers	130,000 lbs.
Total weight	168,000 lbs.
Diameter of cylinders	19 in.
Stroke of pistons	28 "
Diameter of drivers	60 "
Type of boiler	Extended wagon top
Working steam pressure	200 lbs.
Heating surface, total	2,602 sq. ft.
Tubes, number	328
" material	Charcoal iron
" outside diameter	2 in.
" length	14 ft. 2 "
Firebox, length	108 "
" width	41 1/4 "
Grate area	31.09 sq. ft.
Tank capacity	5,000 gals.
Coal capacity	9 tons

Type	10-wheel freight (Baldwin)
Weight on drivers	123,300 lbs. (approximate)
Total weight	161,050 lbs. (approximate)
Diameter of cylinders	19 in.
Stroke of pistons	28 "
Diameter of drivers	60 "
Type of boiler	Extended wagon top
Working steam pressure	200 lbs.
Heating surface, total	2,584 sq. ft.
Tubes, number	328
" material	Charcoal iron
" outside diameter	2 in.
" length	14 ft. 2 "
Firebox, length	108 "
" width	41 1/4 "
Grate area	31.09 sq. ft.
Tank capacity	5,000 gals.
Coal capacity	9 tons

Type	Consolidation
Weight on drivers	179,000 lbs.
Total weight	202,000 lbs.
Diameter of cylinders	22 in.
Stroke of pistons	30 "
Diameter of drivers	57 "
Type of boiler	Straight top
Working steam pressure	200 lbs.
Heating surface, total	3,195 sq. ft.
Tubes, number	403
" material	Detroit seamless drawn steel
" outside diameter	2 in.
" length	14 ft. 6 1/2 "
Firebox, length	107 "
" width	71 1/4 "
Grate area	.53 sq. ft.
Tank capacity	6,000 gals.
Coal capacity	10 tons

#### Special Equipment.

Air brakes	Westinghouse
Bell ringer (for switching)	Gollmar
Boiler lagging	Magnesia
Brake-beams (all except consolidation)	Monarch
Brake-shoes (switching)	Perfecto or Herron
" (Am. Loco., 10-whl. drivers)	Perfecto or Herron
" (Am. Loco., 10-whl. tender)	Condon
" (Baldwin, 10-whl., freight)	S. A. L. standard
Couplers (all except consolidation)	Tower
Headlights (switching and 10-whl. freight)	Schroeder
" (consolidation)	Pyle National
Injector (all except consolidation)	S. A. L. standard
Injector (consolidation)	Monitor
Journal bearings (all except consolidation)	Sellers
Piston rod packing	Ajax
Valve rod packing (switching and Baldwin 10-whl.)	U. S. Metallic
" " " (consolidation)	U. S. Metallic
" " " (Am. Loco. 10-whl.)	Soapstone
Safety valve	Coale muffled and consolidated
Sanding devices	Leach
Sight-feed lubricators	Nathan
Springs (all except consolidation)	Ry. Steel-Spring Co.
Steam gages	Ashcroft or Star
Tires, driving wheel (except consolidation and Am. Loco. 10-wheel)	Midvale
Draft gear	Farrow
Staybolts (except consolidation and Am. Loco. 10-wheel)	U. S. or Ulster special
Grease lubricator	Elvin
Journal boxes (all except consolidation)	Symington
Valve gear (all except switching)	Walschaert
Fire door opener (Bald. 10-whl.)	Brewer
Relief valve (Baldwin 10-wheel freight)	Star
Side bearings (Bald., 10-wheel freight)	Norwood
Steam heat equipment (10-wheel passenger)	Safety

**CAR BUILDING.**

*The Colorado Midland* is about to receive bids on 100 box cars.

*The Kenosha Electric*, Kenosha, Wis., will order six city single truck cars.

*The Colorado & Southern* is in the market for 100 additional ballast cars.

*The Ft. Worth & Denver City* has ordered two baggage cars from the Pullman Co.

*The Guanica Central* has ordered two Hart convertible cars from the Rodger Ballast Car Company.

*The Dallas (Tex.) Street Railway* has ordered 19 double-deck cars through Stone & Webster, of Boston.

*The Cumberland & Pennsylvania*, C. W. Watson, President, has ordered a private car from the Pullman Co.

*The Norfolk & Western*, it is understood, has ordered 1,000 steel coal cars from the Pressed Steel Car Company.

*The Assumption Coal & Mining Co.* has ordered 10 gondola cars of 80,000 lbs. capacity from the American Car & Equipment Co.

*The Atlantic Coast Line* denies that it is in the market for 2,000 additional cars, as reported in the *Railroad Gazette* of February 22.

*The Bolivia Railway* has ordered, through W. R. Grace & Co., New York, 50 Hart convertible cars from the Rodger Ballast Car Co.

*The Intercolonial of Canada* has ordered an 80-120 h.p. Ganz self-propelled motor car from the Railway Auto Car Company, New York.

*The Lamar Lumber Co.*, Hattiesburg, Miss., has ordered ten 41-ft. flat cars of 60,000 lbs. capacity from the Hicks Locomotive & Car Works.

*The Missouri Southern* has ordered 10 flat cars from the Ryan Car Co., and is having one combination coach and one passenger coach remodeled.

*The J. D. McArthur Co.*, Winnipeg, Man., has ordered 100 36-ft. flat cars of 60,000 lbs. capacity from the Hicks Locomotive & Car Works for May delivery.

*Swift & Co.*, Chicago, have ordered 100 steel tank car underframes of 60,000 lbs. capacity from the Bettendorf Axle Co., for April to July delivery. These cars will be 31 ft. long and 9 ft. wide, over all. The special equipment is as follows: Bolsters, Bettendorf; brake-beams, Damascus; dust guards, Harrison; trucks, Bettendorf.

*The American Milling Co.* has ordered 25 steel tank car underframes of 80,000 lbs. capacity from the Bettendorf Axle Co., for June delivery. These cars will be 31 ft. long and 9 ft. wide, over all. The special equipment is as follows: Bolsters, Bettendorf; brake-beams, Damascus; draft rigging, Cardwell; dust guards, Harrison; trucks, Bettendorf.

*The Long-Bell Lumber Co.*, Kansas City, Mo., has ordered for the Longville Long Leaf Lumber Co. 120 logging cars of 60,000 lbs. capacity, and three tank cars of 6,700 gal. capacity from the Beaumont Iron Works, instead of 175 logging cars and six tank cars, as reported in the *Railroad Gazette* of February 22. The logging cars will measure 40 ft. long and 9 ft. 8 in. wide over all.

*The Des Moines, Iowa Falls & Northern* has ordered 50 gondola cars, 25 box cars and 10 standard stock cars, all of 80,000 lbs. capacity, from the American Car & Foundry Co. The gondola cars will be 36 ft. long, 8 ft. 6 in. wide and 3 ft. 9 in. high, inside measurements. The box cars will be 36 ft. long, 8 ft. 6 in. wide and 8 ft. high, inside measurements. The special equipment for all includes Chicago couplers.

*The Temiskaming & Northern Ontario*, as reported in the *Railroad Gazette* of February 22, has ordered 100 steel underframe flat cars of 100,000 lbs. capacity from the Dominion Steel Car Co., Montreal, Que., and 100 wooden flat cars of 60,000 lbs. capacity from the Rathbun Co., Deseronto, Ont. The steel underframe cars will measure 36 ft. 10 in. long, over all, and 9 ft. 4 in. wide, over side sills. The wooden cars will measure 36 ft. 9 $\frac{1}{4}$  in. long over end sills and 9 ft.  $\frac{3}{4}$  in. wide over side sills. The special equipment for both includes:

Bolsters . . . . .	Simplex
Brake-beams . . . . .	Simplex (inside hung)
Brakes . . . . .	Westinghouse
Brasses . . . . .	Canadian Bronze Co.
Couplers . . . . .	Tower
Draft rigging . . . . .	Miner tandem
Journal boxes . . . . .	McCord
Trucks . . . . .	Arch bar

*The Detroit, Toledo & Ironton* has ordered for the Ann Arbor two first class coaches and two combination cafe coaches from the

Pullman Company for June delivery. The first class coaches will measure 70 ft. long, and the combination cafe coaches will measure 72 ft. long; both the first class and the cafe coaches will measure 9 ft. 8 in. wide and 6 ft. 10 in. high, inside measurements. The special equipment for both includes:

Bolsters . . . . .	Commonwealth
Brake-beams . . . . .	Diamond special
Brake-shoes . . . . .	Lappin
Brakes . . . . .	Westinghouse
Curtain fixtures . . . . .	Forsyth
Curtain material . . . . .	Pantasote
Draft rigging . . . . .	Miner
Heating system . . . . .	Consolidated
Journal boxes . . . . .	Symington
Light . . . . .	Pintsch
Paint . . . . .	Pullman
Platforms . . . . .	Standard Coupler Co.
Roofs . . . . .	Pullman
Trucks . . . . .	Pullman
Vestibules . . . . .	Pullman
Wheels . . . . .	Paige

**RAILROAD STRUCTURES.**

*ALBON, MINN.*—Plans are being made by the Duluth, Missabe & Northern for a new passenger station.

*CHAMBERSBURG, PA.*—The Chambersburg & Gettysburg Electric Railway Company, it is said, will put up a large bridge over Conococheague creek; also one over the Western Maryland tracks.

*DENISON, TEX.*—The Missouri, Kansas & Texas has appropriated \$145,000 for a new passenger station, and \$40,000 for a new freight house.

*EXETER, N. H.*—The car barns of the Exeter, Hampton & Amesbury Street Railway Company were recently damaged by fire; loss \$50,000.

*HAMLIN, TEX.*—An agreement, it is said, has been made by the Kansas City, Mexico & Orient with the city officials to make this place its division terminal. The company proposes to put up a roundhouse and repair shops.

*KANKAKEE, ILL.*—The Chicago, Indiana & Southern, it is reported, has plans ready for building additions to shops here.

*MACON, GA.*—Arrangements are reported made by the Central of Georgia to put up new shops here.

*MT. CARBON, PA.*—Additions to the Pennsylvania roundhouse, it is said, will be made at a cost of \$48,000.

*NORFOLK, VA.*—The Tidewater has given a dredging contract for work near its proposed new steel pier at Sewall's Point, Va., which is to be 60 ft. wide, 65 ft. high and 1,000 ft. long, to the P. Sanford-Ross Company, Inc., of Jersey City, N. J., and a contract for the superstructure of the pier to the McLean Contracting Company, of Baltimore. The value of the contracts is about \$2,000,000.

*ROANOKE, VA.*—The Roanoke Railway & Electric Company, it is said, has secured land as a site for a new power station to cost \$250,000.

*SANTA BARBARA, CAL.*—The Southern Pacific, it is said, will put up a new roundhouse at a cost of \$100,000, and new machine shops.

**RAILROAD CONSTRUCTION.****New Incorporations, Surveys, Etc.**

*ARKANSAS, OKLAHOMA & WESTERN.*—Work is said to be underway on this proposed line from Eureka Springs, Ind. T., north to Pryor Creek, 40 miles. The company has a capital of \$3,000,000. A. L. Williams, of Fayetteville, Ark., is Vice-President. It is said that the company will absorb the Rogers Southwestern.

*ATCHISON, TOPEKA & SANTA FE.*—The Denver, Enid & Gulf has opened an extension from Medicine Lodge, Kan., to Lake City, 14 miles.

*ATLANTIC, NORTHERN & SOUTHERN.*—This company is said to have raised funds to build its road, and preliminary surveys are to be started at once. J. H. Simmons, President; E. Marquis, Treasurer, Atlantic, Iowa. (Feb. 15, p. 226.)

*AU SABLE & NORTH-WESTERN.*—A new branch, called the Curran branch, has been opened for business from Crooked Lake Junction, Mich., to Curran, six miles.

*BOSTON & ALBANY.*—See New York Central & Hudson River.

*BRANDON & LAUREL.*—Incorporated in Mississippi by residents of Brandon. The company is making preliminary surveys for a line from Brandon, Miss., southeast to Laurel, 65 miles.

**CANYON CITY & ROYAL GORGE.**—Incorporated, with a capital of \$1,250,000, to carry out the work of the Canyon City, Florence & Royal Gorge Interurban, which was projected to build an electric line from Canyon City, Colo., through Royal Gorge, about 11 miles, and which went into the hands of a receiver. The directors of the new company are F. D. Heath, D. E. Gibson, James H. Peabody, W. H. Peabody and E. M. Smith, of Canyon City; W. W. Umbenhauer and T. J. Budd, of Philadelphia; W. Wood and W. Hutty, of Kansas City.

**CHESTERFIELD & LANCASTER.**—This road has been opened from Ruby, S. C., to Guess, eight miles.

**CHICAGO & NORTH-WESTERN.**—On the Manitowoc, Green Bay & Northwestern, a new section from Eland Junction, Wis., east to Pulaski, 53 miles, has been opened for business.

**CHICAGO, BURLINGTON & QUINCY.**—Surveys, it is said, are being made by this company for an extension of the Sargent branch from Sargent, Neb., west to Anselmo, 30 miles.

**CINCINNATI, TOLEDO & DETROIT SHORT LINE.**—This company has bought from the People's Rapid Transit Company its right of way for a proposed line from Toledo to Cincinnati. President Morgan, of the C. T. & P., is reported as saying that contracts for building the line have been let.

**DENVER, ENID & GULF.**—See Atchison, Topeka & Santa Fe.

**LITTLE KANAWHA.**—This company now operates its road from Parkersburg, W. Va., to Owingsport, 31 miles, and has steamer connections to Creston.

**LOUISIANA RAILWAY & NAVIGATION.**—Part of the New Orleans division of this road, from Edinboro, La., southeast to New Orleans, 59 miles, has been opened for both passenger and freight business.

**MEXICAN INTERNATIONAL.**—This company has opened for business a new branch from Sabinas, Mex., to Rosita, 10 miles.

**MISSISSIPPI ROADS.**—Application has been made at Jackson, Miss., to incorporate a company to build a line from Gulfport, Miss., north to West Point, 220 miles. This is thought to be a project of the St. Louis & San Francisco.

**NEW YORK CENTRAL & HUDSON RIVER.**—About \$1,500,000 is to be spent for betterments on the Boston & Albany. The plans call for 14½ miles of third track between Pittsfield, Mass., and Albany, N. Y., and additional track at Charlton, Mass., also an extension of the third and fourth tracks from Lake Crossing, Mass., west to South Framingham, about five miles.

**NIAGARA PENINSULA.**—An application will be made to the Ontario Legislature for incorporation of a company under this name to build a line from Port Colborne, Ont., west to Welland. The application is made by Rowell, Reid, Wilkie, Wood and Gibson, of Toronto, solicitors.

**NORTHERN OF MAINE.**—Application has been made in Maine by a company under this name with a capital of \$500,000 for a charter to build from a point near the terminus of the Bangor & Aroostook near Fort Kent southwest to the St. Johns and the St. Francis river, 25 miles; also from near Kent east to Frenchville, Madawaske and Grant Isle, thence southeast to Van Buren, 35 miles. Arthur H. Lewis, of Chicago; V. N. Therriault, of Fort Kent; E. E. Goodrich, of Waterville, and E. R. Michand, of Frenchville, are interested.

**OCEAN SHORE & EASTERN.**—See Ocean Shore.

**OCEAN SHORE (ELECTRIC).**—This company, it is said, has incorporated the San Joaquin Valley Western to build an extension of its road from Santa Cruz, Cal., east via Holester towards Fresno, 40 miles.

The Ocean Shore & Eastern has been incorporated with a capital of \$3,000,000 to build from Santa Cruz, Cal., southeast to Watsonville, 20 miles.

**OREGON & WASHINGTON.**—See Oregon Railroad & Navigation Company.

**OREGON RAILROAD & NAVIGATION COMPANY.**—For the Oregon & Washington, to run from Portland, Ore., north to Puget Sound, land for terminals has been secured in Seattle by purchase from the Great Northern.

**PENNSYLVANIA.**—The report of this company for the year ending December 31 last, shows that the four-track system was completed on the Middle division between Granville and Mayes, and that work is being pushed in changing the alignment between Vandike and Port Royal; also between Ryde and a point west of Mount Union. The latter section involves heavy cutting and the building of two new stone arch bridges over the Juniata river.

On the Pittsburgh division four-tracking work is in progress between Sang Hollow and Bolivar. This includes a change of line

and two stone arch bridges over the Conemaugh river; also considerable work between Beatty and Southwest Junction.

On the West Pennsylvania division, the line between Blairsville and Tunnelton and the Sang Hollow extension are being revised and double tracked. A number of other important changes are being made at various points on this division.

The company has completed a large amount of yard extension work at various terminal points.

At Greenville, N. J., the work of dredging the channel and filling in the yard has been continued, and additional storage provided for freight, particularly structural steel.

At West Morrisville, Pa., the western terminus of the proposed new freight line from that place to Newark, N. J., the yard is being improved to permit prompt handling of traffic passing over the Trenton cut-off, as well as over the new line from Morrisville to Newark.

On the Monongahela division an extension is being built south 4½ miles to a connection with the Pennsylvania, Monongahela & Southern, which is being built up the valley of the Monongahela river to Rice's Landing, 7½ miles, to develop the coal and other traffic of that section.

Work on the New York tunnel extension is being continued. The tunnels under the East river are about one-quarter finished. The tunnels under the Hudson river have advanced so that laying one of the tubes from Manhattan to Weehawken, N. J., was completed on September 12, and the second tube October 9. The work of lining these tubes with concrete is now under way. On the section between Harrison, near Newark, where the tunnel line leaves the present main line, and the Hudson river, most of the bridges have been built, and the one over the Hackensack river is nearing completion. Excavation work has satisfactorily advanced at the Bergen Hill tunnel approach, and considerable progress has been made on the tunnel. The excavation for the great passenger station in New York City, between Seventh and Eighth avenues, is about finished, and foundation work is now in progress. Work under the streets in the Borough of Manhattan, New York, and in Long Island City is about two-thirds finished.

The Cherry Tree & Dixonville branch has been extended from Clymer, Pa., four miles to Dixonville.

**PHILADELPHIA, NORRISTOWN & NORTHERN.**—Incorporated in Pennsylvania to build a line from Villanova, Pa., north to Norristown, five miles. Morris Bernheimer, Philadelphia, is President.

**PONTIAC CENTRAL.**—The Quebec Legislature has been asked to incorporate this company to build a line from Bryson, Que., along the valley of the Coulonge River to a point on James Bay; also to build branches. Ryan & Bickerdike, Montreal, are solicitors.

**PORTLAND & RUMFORD FALLS.**—Application has been made to the Maine Legislature to incorporate a company to extend this road from Rumford Junction, Me., south to Portland, 30 miles.

**RAYMONDVILLE & WADDINGTON.**—Incorporated in New York with \$150,000 capital to build from Raymondville, Lawrence County, N. Y., to Waddington, 15 miles. When completed the line is to form an extension of the Norwood & St. Lawrence.

**ST. LOUIS, HILLSBORO & SOUTHERN (ELECTRIC).**—This company has voted to issue bonds to secure funds to build an electric line from St. Louis, Mo., to Hillsboro, 40 miles, with a number of branches. Land has been bought for terminals and freight yards in southern St. Louis. H. M. Bower is General Manager.

**ST. LOUIS SOUTHWESTERN RAILWAY OF TEXAS.**—The Lufkin division of this road has been extended from Monterey, Tex., to Warsaw, four miles.

**ST. LOUIS, SPRINGFIELD & OKLAHOMA WESTERN.**—Incorporated in Oklahoma with \$3,750,000 and offices at Lawton, Okla., and Sulphur, Ind. T. The company proposes to build from Lawton, Okla., east to Sulphur, Ind. T., thence northeast through McAlester and Stigler to Sallisaw, 225 miles. The incorporators include: G. S. Stocker, of Sallisaw; W. T. Douglas, R. Downing and A. D. Goodnough, of Sulphur; J. D. Jennings and J. J. Beall, of Oklahoma City.

**SAN JOAQUIN VALLEY WESTERN.**—See Ocean Shore.

**SOUTH TEXAS GULF.**—Incorporated in Texas with \$40,000 capital to build from Artesia, Tex., on the International & Great Northern, northwest to Carizzo Springs, 40 miles. The incorporators include: W. H. Myers and A. W. Raht, of Henrietta; C. M. Wright, R. H. Westlake, A. M. McElnee and M. Schott, of Fort Worth, and J. C. Davis, of Temple.

**SPOKANE & INLAND.**—This company has extended its road from Waverly, Wash., south 12 miles to Rosalia.

**TAYLOR, BRENNAM & HOUSTON.**—Under this name, a company is being organized in Texas to build a line from Taylor, Tex., southeast to Brenham through the counties of Williamson, Milam, Lee

and Washington, 71 miles. The headquarters of the company are at Brenham. Rights of way for the entire line reported secured.

**TENNESSEE COALFIELDS & SOUTH ATLANTIC TRANSCONTINENTAL.**—There is a bill before the legislature of North Carolina to incorporate a company under the above name to build from Knoxville, Tenn., to Waynesville, N. C., and thence to Greenville, S. C.; also to build a branch from Waynesville to Asheville, N. C., and one to Rutherfordton, N. C., at which place connection can be made with the Seaboard Air Line, a total length of about 250 miles. The project is being backed by Asheville men.

**TENNESSEE ROADS.**—Plans are being made by O. G. Wales, of Chicago, to build a line from Florence, Ala., north via Waynesboro and Linden, Tenn., to Waverly, Tenn., 90 miles.

**VIRGINIA-CAROLINA.**—This company has opened for business a new branch from West Damascus, Va., to Taylor's Valley, seven miles.

**WABEE & WAWASEE.**—Incorporation will be asked for by a company under this name to build a line from Syracuse, Ind., west to Wabee lake in Kosciusko County, and thence to Milford; also to build from Syracuse to Lingle lake, 12 miles. A. St. J. Newberry, W. D. Frazer, C. I. Reilly and J. P. Nolan are interested.

**WINNIPEG & NORTHWESTERN.**—Application will be made by A. S. Drummond, of Winnipeg, Man., to the Parliament at Ottawa for a charter to build a line from Winnipeg, north by way of Lake Manitoba and thence west via Fort La Corne and the north side of Saskatchewan River to Lopstick River, and to build branches to Battleford, Lac la Bieche, Edmonton and Athabasca Landing.

**WISCONSIN VALLEY (ELECTRIC).**—Incorporated in Wisconsin, with a capital of \$25,000, to build an electric line from Grand Rapids, Wis., northeast to Stevens Point, 15 miles, and eventually via Wausau to Merrill, 60 miles. The incorporators include George A. Whiting, of Neenah; H. F. Whitcomb and George Lines, of Milwaukee.

#### RAILROAD CORPORATION NEWS.

**ATLANTIC COAST LINE.**—This company has sold to J. P. Morgan & Co. \$5,000,000 5 per cent. three-year notes. It is not stated exactly what use will be made of the proceeds.

This company has made an equipment mortgage to the Safe Deposit & Trust Company, of Baltimore, securing an issue of \$4,500,000 4 per cent. equipment trust serial notes. The mortgage covers 3,280 freight cars and 100 locomotives.

**BROOKLYN HEIGHTS RAILROAD.**—See Brooklyn Rapid Transit.

**BROOKLYN RAPID TRANSIT.**—The Transit Development Company, which already owns some of the principal power houses used by the Brooklyn Rapid Transit, is hereafter to furnish power and take charge of the maintenance and repair of the railroad and its equipment. The entire capital stock of the subsidiary company is owned by the Brooklyn Rapid Transit. Hereafter all the elevated lines are to be operated by the Brooklyn Union Elevated, while the surface roads will operate only surface lines. To this end, the leases of the Brooklyn Union Elevated, of the Sea Beach Railway and of the South Brooklyn Railway to the Brooklyn Heights Railroad have been terminated, while the lease of the Prospect Park & Coney Island has been assigned to the South Brooklyn Railway. These changes are in accordance with an opinion to the effect that elevated railroad corporations and surface railroad corporations are governed by different provisions of the law. The arrangement will not interfere with the through operation of trains.

**BROOKLYN UNION ELEVATED.**—See Brooklyn Rapid Transit.

**BUFFALO & LAKE ERIE TRACTION.**—This company has asked permission to increase its capital stock from \$6,750,000 to \$7,500,000 in order to acquire the \$600,000 stock of the Jamestown, Chautauqua & Lake Erie, which is a steam road running from Jamestown, N. Y., to Chautauqua, 31 miles.

**CANADIAN NORTHERN.**—The Dominion Securities Corporation, Toronto and Montreal, is offering for sale \$600,000 4½ per cent. gold bonds, series L, of the Imperial Rolling Stock Company, a subsidiary of the Canadian Northern. The issue of which this amount is a part is limited to \$2,200,000. The bonds are secured on 46 locomotives, 51 passenger cars and 1,383 freight cars, costing \$2,941,443. Principal and interest is guaranteed by the Canadian Northern.

**CHICAGO & MILWAUKEE ELECTRIC.**—The Western Trust & Savings Bank, Chicago, is offering at 99 and interest the unsold part of an issue of \$2,000,000, two-year 6 per cent. collateral and convertible gold notes secured on \$2,500,000 Chicago & Milwaukee Electric, Wisconsin division, first mortgage guaranteed 5 per cent. bonds of 1925, the notes being convertible into these bonds.

The Chicago & Milwaukee Electric owns 140 miles of double-track road on a private right of way from Racine, Wis., south to Evanston, Ill., where it connects with the Chicago, Milwaukee & St. Paul and the Chicago Street Railway system. The proceeds of the notes are to pay for the completion of the road north to Milwaukee.

**COLORADO SOUTHERN, NEW ORLEANS & PACIFIC.**—Rudolf Kleybolte & Co. recently offered for sale \$1,600,000 equipment trust 5 per cent. notes of this company, guaranteed principal and interest by the St. Louis & San Francisco. The notes are secured on 38 locomotives and 1,045 freight cars costing \$1,895,136, of which the railroad company paid \$295,136 cash.

**CORVALLIS & EASTERN.**—Control of this line has passed to Harriman interests, and it is said that the road will probably be turned over to either the Southern Pacific or Oregon Short Line. The road runs from Idanha, Ore., to Yaquina, 142 miles, and has outstanding \$1,410,000 capital stock and \$2,145,000 bonds. It crosses the Southern Pacific at Albany, Ore.

**HENDERSON CITY RAILWAY.**—The property of this company has been bought for \$80,000 under foreclosure by Charles A. Hincine, President of the Fifth National Bank of Cincinnati, representing the bondholders. The Henderson Traction Company has been organized as a successor.

**HENDERSON TRACTION.**—See Henderson City Railway.

**HOCKING VALLEY.**—The time for deposit of the stock of this company and the Kanawha & Michigan under the plan for the merger has been extended from March 1 to June 1, by which date it is expected the suit brought to prevent the consolidation will have been settled. (March 1, p. 290.)

**JAMESTOWN, CHAUTAUQUA & LAKE ERIE.**—See Buffalo & Lake Erie Traction.

**KANAWHA & MICHIGAN.**—See Hocking Valley.

**LOUISVILLE & NASHVILLE.**—This company has sold \$6,500,000 5 per cent. three-year notes. Of this amount it is understood that \$1,500,000 was sold privately and the remainder to J. P. Morgan & Co. The specific purpose for which the proceeds are to be used was not stated.

**MILWAUKEE ELECTRIC RAILWAY & LIGHT COMPANY.**—N. W. Harris & Co., and Spencer Trask & Co., of New York, are offering jointly \$1,000,000 refunding and extension mortgage 4½ per cent. bonds at 95¾ and interest, being part of an authorized issue of \$20,000,000, of which \$4,000,000 is now outstanding, and the remainder, \$8,000,000, is reserved to retire underlying liens, and is not to be issued until after January 1, 1908, and then only at the rate of not more than \$1,000,000 a year, the proceeds to be used for extensions, improvements and acquisitions. The company owns 103 miles of road, and controls all the gas and electric lighting companies of Milwaukee.

**NATURAL BRIDGE RAILWAY.**—The property of this company has been bought by J. L. Phillips & Co., Thomasville, Ga. The road runs from Vereen, Fla., to Delph, 17 miles, and is being extended northerly 15 miles to a connection with the Seaboard Air Line at Chaires. Surveys have been finished for a further extension from Chaires to Thomasville, 30 miles.

**NEW YORK, NEW HAVEN & HARTFORD.**—The legislative committee on railroads reported in the House on Tuesday against the petition of this company that the company, to enlarge its terminal facilities in Boston, may take property on the South Bay, which lies near the present terminal station. But the committee did report a bill to permit the company to take land for the enlargement of its terminal facilities on the South Bay, naming the property of the Roxbury Wharf Company and of the South Bay Wharf & Terminal Company. The latter plan is of smaller scope than the former. But the company is to get enlarged facilities just the same.

**PENNSYLVANIA.**—The \$60,000,000 three-year 5 per cent. notes recently sold to Kuhn, Loeb & Co. are secured by \$45,000,000 Pennsylvania 4 per cent. equipment trust certificates, \$10,000,000 Pennsylvania 4 per cent. water bonds, and \$8,800,000 Pennsylvania Company stock.

**PENNSYLVANIA COMPANY.**—See Pennsylvania.

**PROSPECT PARK & CONEY ISLAND.**—See Brooklyn Rapid Transit.

**SEA BEACH RAILWAY.**—See Brooklyn Rapid Transit.

**SOUTH BROOKLYN RAILWAY.**—See Brooklyn Rapid Transit.

**SOUTHERN PACIFIC.**—See Corvallis & Eastern.

**SYRACUSE & SOUTH BAY (ELECTRIC).**—The property of this company has been sold under foreclosure to Clifford B. Beebe for \$251,000. The road runs from Syracuse, N. Y., to Oneida Lake, 15 miles.

**TRANSIT DEVELOPMENT COMPANY.**—See Brooklyn Rapid Transit.